

# THE PARADOX OF HUNGER AND OBESITY IN AMERICA

---

Hunger and food insecurity have been called America's "hidden crisis." At the same time, and apparently paradoxically, obesity has been declared an epidemic. Both obesity and hunger (and, more broadly, food insecurity) are serious public health problems, sometimes co-existing in the same families and the same individuals. Their existence sounds contradictory, but those with insufficient resources to purchase adequate food can still be overweight, for reasons that researchers now are beginning to understand. Policymakers and the public need to better grasp this apparent paradox if our nation is to grapple with these parallel threats to the well-being of many children and adults, and avoid potentially damaging policy prescriptions arising from a mistaken belief that food insecurity and obesity cannot co-exist.

## HUNGER AND FOOD INSECURITY THREATEN MANY LOW-INCOME PEOPLE IN THE US

Hunger and food insecurity (see text box for definitions) affect more than 30 million people each year, according to national studies carried out by the Census Bureau and the US Department of Agriculture.<sup>1</sup> Low-income households are much more likely than others to suffer from hunger and food insecurity since they have fewer resources to buy food.

- **Food insecurity** occurs whenever the availability of nutritionally adequate and safe food, or the ability to acquire acceptable foods in socially acceptable ways, is limited or uncertain.
- **Hunger** is defined as the uneasy or painful sensation caused by a recurrent or involuntary lack of food and is a potential, although not necessary, consequence of food insecurity. Over time, hunger may result in malnutrition.
- **Food insufficiency** refers to an inadequate amount of food intake due to lack of resources.

## OBESITY IS GROWING IN ALL POPULATION GROUPS

Simply stated, obesity results when energy intake exceeds energy expenditure. This explanation, however, provides little insight into the important social and environmental causes of higher energy consumption or lower energy expenditures. These causes include energy-dense high-fat foods and larger portion sizes, for example, and lower levels of physical activity (at work, schools, home, and elsewhere).<sup>2</sup>

Overall, the American population is growing more obese. Some low-income populations are also overweight.<sup>3</sup> While the degree to which social, cultural, environmental, and genetic factors have contributed to the increase in obesity is not precisely known, we do know much that can help explain how low-income, food-insecure Americans can be overweight.

## CAN OBESITY CO-EXIST WITH HUNGER AND FOOD INSECURITY?

While most Americans are affected by the social and environmental causes of higher energy consumption or lower energy expenditures previously described, many households face the additional burdens of low incomes, which often leave them insufficient money to buy food. Through recent research, scholars now are gaining a better understanding of how food insecurity can be related to obesity. Some of the research in this area is very new, and further research is likely to provide additional insights linking hunger and food insecurity to obesity.

Food insecurity exists when people, due to economic constraints, lack access to enough food to fully meet basic needs at all times. They fear running out of food, and reduce the

quality of their diets and/or reduce the quantity of food they consume. Food insecurity is not limited to those for whom energy supplies are always inadequate, which helps explain why those who are food insecure can also be overweight.

A lack of adequate resources for food could result in weight gain in several ways:

***The need to maximize caloric intake.*** One factor that may contribute to the co-existence of obesity and food insecurity is the need for low-income families to stretch their food money as far as possible. Without adequate resources for food, families must make decisions to maximize the number of calories they can buy so that their members do not suffer from frequent hunger. Low-income families therefore may consume lower-cost foods with relatively higher levels of calories per dollar to stave off hunger when they lack the money or other resources like food stamps to purchase a healthier balance of more nutritious foods.<sup>4</sup> The greater the economic constraints, the harder it will be for families to achieve the nutritional quality of foods they desire.<sup>5</sup> This in turn affects the overall energy density of the diet.

***The trade-off between food quantity and quality.*** The trade-off between food quantity and quality is shown by research on coping strategies among food-insecure households. This research shows that, along the continuum of typical coping strategies, food quality is generally affected before the quantity of intake. Households reduce food spending by changing the *quality* or *variety* of food consumed before they reduce the *quantity* of food eaten.<sup>6</sup> As a result, while families may get enough food to avoid feeling hungry, they also may be poorly nourished because they cannot afford a consistently adequate diet that promotes health and averts obesity. In the short term, the stomach registers that it is full, not whether a meal was nutritious.

***Overeating when food is available.*** In addition, obesity can be an adaptive response to periods when people are unable to get enough to eat. Research indicates that chronic ups and downs in food availability can cause people to eat more, when food is available, than they normally would.<sup>7</sup> When money or food stamps are not available for food purchases during part of the month, for example, people may overeat during the days when food is available. Over time, this cycle can result in weight gain.<sup>8</sup>

Research among food-insecure families also shows that low-income mothers first sacrifice their own nutrition by restricting their food intake during periods of food insufficiency in order to protect their children from hunger.<sup>9</sup> This phenomenon may result in eating more than is desirable when food is available, thereby contributing to obesity among poor women.

***Physiological changes.*** Physiological changes may occur to help the body conserve energy when diets are periodically inadequate. The body can compensate for periodic food shortages by becoming more efficient at storing more calories as fat.<sup>10</sup>

## **COSTLY CONSEQUENCES**

With fewer resources to buy food, or to obtain health care or other preventive or remedial interventions, the poor are particularly susceptible to damage from hunger/food insecurity, obesity, or both.

Both hunger/food insecurity and obesity have costly direct and indirect consequences. Obesity is a risk factor for heart disease, diabetes, several types of cancer, and other chronic health problems. It also is associated with premature death and disability, increased health care costs, and lost productivity.<sup>11</sup>

Hunger and food insecurity impair health status, making people less likely to resist illness and more likely to become sick or hospitalized. Hunger is widely known to impair cognitive or mental function in children, leading to a reduced ability to learn and lower grades and test scores. Lack of adequate resources for food also negatively affects behavior, especially among children, leading to a greater need for mental health and special education services.<sup>12</sup>

By impairing health status and cognitive function, hunger/ food insecurity and obesity not only limit the well-being of individuals, but also undermine the nation's investments in education and our need for a more productive and competitive workforce.

## SOLUTIONS TO HUNGER, FOOD INSECURITY, AND OBESITY

Both obesity and hunger/food insecurity require solutions that include regular access to nutritionally adequate food. Federal nutrition programs – food stamps, WIC, and child nutrition programs like school lunch and breakfast – historically have protected the nation's most vulnerable people from severe hunger and malnutrition. Today, federal nutrition programs continue to be vital for health, education, and economic well-being, and are critical lifelines for families struggling at low-wage jobs. Eligibility for these programs needs to be expanded to reach more in need. Suggestions that food allotments should be reduced, on the grounds that nutrition programs contribute to obesity among the poor because they provide too much food, are without scientific merit.

Federal nutrition programs provide access to food, and, when working properly, can help families achieve food security. In addition, evidence shows that each of the major federal nutrition programs improves nutrition:

- The **Food Stamp Program** is the largest nutrition program for poor households. The program increases food security and enhances household nutrition. Each dollar in food stamps increases a household's Healthy Eating Index score (an indicator of overall dietary quality).<sup>13</sup> However, the Food Stamp Program only provides 79 cents per person per meal, on average. Because benefits are so low, and because food stamp households have such low incomes (nearly 90 percent living on incomes below the poverty level<sup>14</sup>), it is very difficult for them to purchase an adequate diet over the longer term. Many recipients run out of food stamps and money to buy food before the end of each month. Studies show that this shortfall leads to food shortages at some point each month.<sup>15</sup> This puts them precisely in the situation referred to earlier: they face cycles of food availability and restriction, or forgo a balanced diet and depend on a few inexpensive staples to meet their families' nutrition needs on a monthly basis.
- Children who participate in the **school lunch and breakfast programs**, compared with students who participate in neither program, consume more than twice as many servings of milk and of fruits and vegetables combined, and one quarter the number of servings of soda and fruit-flavored drinks.<sup>16</sup> Increasingly, the programs offer more healthful meals with a variety of foods and appropriate portion sizes. The school lunch and breakfast programs are required to serve meals that are in compliance with the US Dietary Guidelines for fat and saturated fat. USDA studies show a steady reduction in the percent of calories from fat and saturated fat in school meals since the early 1990s.<sup>17</sup> If there are nutrition problems in the school cafeteria, they often come from the dining environment – less nutritious foods that vending machines and a la carte lines offer in competition with the federal lunch program; the lack of time and space to eat; and long lines.

- **WIC** (the Special Supplemental Nutrition Program for Women, Infants, and Children) provides food packages geared to supplement the diets of low-income women, infants and children with key nutrients that are most likely to be lacking in their diets. WIC offers nutrition education especially targeted to the needs of low-income young mothers and children. WIC has been shown to improve the dietary intake of pregnant and post-partum women and young children.<sup>18</sup>
- The **Child and Adult Care Food Program** (CACFP) provides nutritious meals and snacks to children in child care programs. Established meal pattern requirements and regulations ensure that the foods served through CACFP meet children's daily energy and nutrient needs. Research shows that children who receive CACFP meals and snacks have higher nutrient levels, and consume more servings of milk and vegetables, and fewer servings of fats and sweets, than children in child care programs that do not participate in the program.<sup>19</sup>

#### **A REFORM AGENDA TO ADDRESS BOTH HUNGER AND OBESITY**

Strengthening federal nutrition programs requires enhancing, not reducing, benefits. Federal nutrition programs also should be improved nutritionally. The poor have a special need for stronger nutrition programs with increased access and availability, and more adequate benefits that would allow families to purchase healthier foods. Greater availability and nutritional quality of vital federal food programs such as food stamps, school lunch and breakfast, WIC and child care food can go a long way toward reducing hunger, food insecurity, and obesity in America. These programs can also support increased physical activity by children and their families. At the same time, our nation can address the more fundamental causes of hunger by focusing on more adequate wages, affordable housing, and health care and child care to reduce poverty and support the efforts of families to be productive and self-sufficient.

Improving the nutritional status of households through these means will do much to ward off hunger and food insecurity, and also combat increasing rates of obesity, thereby improving the health and security of millions of Americans.

**Developed by: Center on Hunger and Poverty and Food Research and Action Center**

- <sup>1</sup> Nord, M., Andrews, M., & Carlson, S. (2002). *Household Food Security in the United States, 2001*. Washington, DC: U.S. Department of Agriculture, Economic Research Service, Food and Rural Economics Division. <http://www.ers.usda.gov/publications/fanrr29/>
- <sup>2</sup> Flegal, K.M., Carroll, M.D., Kuczmarski, R.J., & Johnson, C.L. (1998). Overweight and obesity trends in the United States: prevalence and trends, 1960-1994. *International Journal of Obesity*, 22, 39-47.
- <sup>3</sup> 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. <http://www.surgeongeneral.gov/topics/obesity/calltoaction/CalltoAction.pdf>
- <sup>4</sup> Basiotis, P.P. (1992). *Validity of the Self-Reported Food Sufficiency Status Item in the U.S. Department of Agriculture's Food Consumption Surveys*. In V.A. Haldeman (Ed.), *American Council on Consumer Interests 38<sup>th</sup> Annual Conference: The Proceedings*. Columbia, MO: American Council on Consumer Interests.
- <sup>5</sup> Darmon, N., Ferguson, E.L., & Briand, A. (2002). A cost constraint alone has adverse effects on food selection and nutrient density: an analysis of human diets by linear programming. *Journal of Nutrition*, 132, 3764-3771.
- <sup>6</sup> Radimer, K.L., Olson, C.M., Greene, J.C., Campbell, C.C., & Habicht, J. (1992). Understanding hunger and developing indicators to assess it in women and children. *Journal of Nutrition Education*, 24, 36S-45S.
- <sup>7</sup> Polivy, J. (1996). Psychological consequences of food restriction. *Journal of the American Dietetic Association*, 96, 589-592.
- <sup>8</sup> Townsend, M.S., Peerson, J., Love, B., Achterberg, C. & Murphy, S.P. (2001). Food insecurity is positively related to overweight in women. *Journal of Nutrition*, 131, 1738-1745.
- <sup>9</sup> Radimer, K.L., Olson, C.M., Greene, J.C., Campbell, C.C., & Habicht, J. (1992). Understanding hunger and developing indicators to assess it in women and children. *Journal of Nutrition Education*, 24, 36S-45S.
- <sup>10</sup> Wardlaw, G.M. & Insel, P.M. (1996). *Perspectives in Nutrition*. Third Edition. New York, NY: WCB/McGraw-Hill.
- <sup>11</sup> 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. <http://www.surgeongeneral.gov/topics/obesity/calltoaction/CalltoAction.pdf>
- <sup>12</sup> Center on Hunger and Poverty. (2002). *The Consequences of Hunger and Food Insecurity for Children*. Waltham, MA: Heller School for Social Policy and Management, Brandeis University. <http://www.centeronhunger.org/pdf/ConsequencesofHunger.pdf>
- <sup>13</sup> Basiotis, P.P., Kramer-LeBlanc, C.S., & Kennedy, E.T. (1998). Maintaining nutrition security and diet quality: the role of the Food Stamp Program and WIC. *Family Economics and Nutrition Review*, 11 (1 & 2), 4-16.
- <sup>14</sup> Rosso, R. (2003). *Characteristics of Food Stamp Households: Fiscal Year 2001*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition and Evaluation. <http://www.fns.usda.gov/oane/MENU/Published/FSP/FILES/Participation/2001CharReport.pdf>
- <sup>15</sup> Kim, M., Ohls, J. & Cohen, R. (2001). *Hunger in America 2001 - National Report Prepared for America's Second Harvest*. Princeton, NJ: Mathematica Policy Research, Inc. <http://www.mathematica-mpr.com/PDFs/hunger2001.pdf>
- <sup>16</sup> Gleason, P. & Sutor, C. (2001). *Children's Diets in the Mid-1990s: Dietary Intake and Its Relationship with School Meal Participation*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition and Evaluation. <http://www.fns.usda.gov/oane/MENU/Published/CNP/FILES/ChildDiet.pdf>
- <sup>17</sup> Fox, M.K., Crepinsek, M.K., Connor, P., & Battaglia, M. (2001). *School Nutrition Dietary Assessment Study—II, Summary of Findings*. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition and Evaluation. <http://www.fns.usda.gov/oane/MENU/Published/CNP/FILES/SNDAllfind.pdf>
- <sup>18</sup> Rush, D. (1988). *The National WIC Evaluation: An Evaluation of the Special Supplemental Food Program for Women, Infants and Children*. Research Triangle Park, N.C.: Research Triangle Institute.
- <sup>19</sup> Bruening, K., Gilbride, J.A., Passanante, M.R., & McClowry, S. (1999). Dietary intake and health outcomes among young children attending 2 urban day-care centers. *Journal of the American Dietetic Association*, 99, 1529-1535.

## CENTER ON HUNGER AND POVERTY



Heller School for Social Policy  
and Management • Brandeis  
University • Mailstop 077 •  
Waltham, MA 02454  
phone: (781) 736-8885  
fax: (781) 736-3925  
[www.centeronhunger.org](http://www.centeronhunger.org)

## F·R·A·C



1875 Connecticut Ave. •  
NW Suite 540 •  
Washington, DC 20009  
phone: (202) 986-2200  
fax: (202) 986-2525  
[www.frac.org](http://www.frac.org)