



PROFILES OF LATINO HEALTH: A CLOSER LOOK AT LATINO CHILD NUTRITION

With childhood hunger and obesity recently reaching peak levels in the United States, policymakers at the federal, state, and local levels have recognized that the health of future generations is contingent upon improving the nutritional status of American families.¹ President and First Lady Obama, together with leaders in the U.S. Congress, have made child nutrition a top policy priority for the nation.

Addressing the unique needs of the Latino² population will be an integral part of any strategy to promote and improve child nutrition. Hispanic children currently make up more than one in five children in the U.S., and, as the fastest-growing segment of the child population, are expected to represent nearly one in three children by 2030.³ Latino children are also the hungriest in America—making up almost 40% of the one million children living in hunger.⁴ Ironically, they also have one of the highest risks for obesity; researchers estimate that nearly two-fifths (38.5%) of Latino children ages two to 19 were overweight or obese in 2008.⁵ Because hunger and obesity have serious implications for the developmental and health outcomes of children and adolescents, it is imperative to take action now, before these children become the first generation not to outlive its parents.

September 2010 marks both Childhood Obesity Awareness Month and National Hunger Action Month, issues that are two sides of the same coin. In recognition of these movements, NCLR is releasing a new 12-part series, *Profiles of Latino Health: A Closer Look at Latino Child Nutrition*. Each profile provides a snapshot of the latest research and data on issues affecting Latino child nutrition.

Topic overview and release schedule:

- Issue 1: Child hunger and family food insecurity within the Latino community** (August 25)
- Issue 2: Latino trends in child overweight and obesity** (September 1)
- Issue 3: Food spending in Hispanic households** (September 8)
- Issue 4: The food environment and Latinos' access to healthy foods** (September 15)
- Issue 5: Links between food insecurity and Latino child obesity** (September 21)
- Issue 6: Implications of food insecurity for Hispanic children** (September 29)
- Issue 7: Implications of overweight and obesity for Latino children** (October 6)
- Issue 8: Links between Latino children's nutrition and access to health care** (October 13)
- Issue 9: Latino participation in the Special Supplemental Program for Women, Infants, and Children (WIC)** (October 20)
- Issue 10: Hispanic participation in school-based nutrition programs** (October 27)
- Issue 11: Latino participation in the Supplemental Nutritional Assistance Program (SNAP)** (November 1)
- Issue 12: Nutrition issues and trends among children of immigrants** (November 8)

Endnotes

¹ The 12-part series, *Profiles of Latino Health: A Closer Look at Latino Child Nutrition*, was authored by Kara D. Ryan, Policy Analyst with the Health Policy Project at the National Council of La Raza (NCLR), with substantive guidance and oversight from Jennifer Ng'andu, Deputy Director of the Health Policy Project. Thanks are also due to Brad D. Johnson, consultant, who provided input on several of these profiles. Kari Nye, Assistant Editor, and Tiptavee Thongtavee, Graphic Designer, provided technical support and prepared the document for publication. NCLR is the largest national Hispanic civil rights and advocacy organization in the United States.

² The terms “Hispanic” and “Latino” are used interchangeably by the U.S. Census Bureau and throughout this document to refer to persons of Mexican, Puerto Rican, Cuban, Central and South American, Dominican, Spanish, and other Hispanic descent; they may be of any race. Furthermore, unless otherwise noted, estimates in this document do not include the 3.9 million residents of Puerto Rico.

³ Mark Mather and Patricia Foxen, *America's Future: Latino Child Well-Being in Numbers and Trends* (Washington, DC: National Council of La Raza, 2010).

⁴ Mark Nord, Margaret Andrews, and Steven Carlson, *Household Food Security in the United States*, 2008. Economic Research Services, U.S. Department of Agriculture. Washington, DC, 2009.

⁵ Cynthia L. Ogden et al., “Prevalence of High Body Mass Index in U.S. Children and Adolescents, 2007–2008,” *JAMA* 303, no. 3 (January 2010): 242–249.



ISSUE 1: CHILD HUNGER AND FAMILY FOOD INSECURITY WITHIN THE LATINO COMMUNITY

Millions of Latino¹ families and children live in households without reliable access to healthy foods.² This means that, according to the U.S. Department of Agriculture (USDA), these households are “food insecure”—they do not have “consistent access to enough food for active healthy lives for all household members at all times during the year.” When budgets are stressed, many families have difficulty accessing enough resources to put sufficient food on the table, and in an era of economic crisis, this problem is magnified.

Food insecurity can have lasting impacts on children’s health; when access to nutritious foods is limited, healthy growth and development may be at risk. With Hispanic families experiencing some of the highest rates of food insecurity in the U.S., this problem is a real threat to the health and well-being of Latino children.

Food insecurity affects millions of Americans, including more than one in four (29.4%) Hispanics.³

- In 2008, 17 million U.S. households, representing more than 49 million people, were food insecure.
- Hispanics made up more than one-fifth (21.2%) of all food-insecure households.

Rates of food insecurity are highest among Hispanic and non-Hispanic Black households and are particularly acute among families with children.

- Overall, more than one in four Hispanic (26.9%) and non-Hispanic Black (25.7%) households were food insecure in 2008, compared to about one in ten (10.7%) non-Hispanic White households.
- In families with children under age 18, these rates are even higher. About one in three Hispanic (32.1%) and Black (31.9%) households with children are food insecure, along with about one in seven (15.5%) White households in which children are present.
- There are nearly five million Hispanic children living in food-insecure households, representing more than one-quarter (29.8%) of all children in food-insecure families.

Food insecurity with hunger—described by the USDA as “very low food security”—is a significant problem among Latino families with children.

- There are nearly four million Hispanics living in households with very low food security.
- Hispanic children are more than four times as likely (2.7%) as non-Hispanic White children (0.6%) to be living with very low food security.
- Latinos make up the largest share (37.1%) of all households with very low food security among children, followed by non-Hispanic Blacks (32.6%), non-Hispanic Whites (25.2%), and children of other races/ethnicities (5%).

Latinos’ food-insecurity rates have been relatively high over the past decade and have increased with the recent economic crisis.

- Over the past decade, children in homes headed by Latinos and Blacks have consistently faced much higher rates of food insecurity than children in households headed by Whites (see Figure 1).
- The proportion of Latino children living in food-insecure households has remained high, fluctuating between one-quarter and one-third of all Latino children.
- While this rate dipped by several percentage points between 2005 and 2007, food insecurity among children jumped sharply from 26% in 2007 to 33.9% in 2008, a year marked by the onset the severe economic recession.

These consistently high rates of food insecurity among Latino families have serious implications for the health and nutrition of Latino children.

Box 1:

Food Insecurity Defined

Food insecurity: At times during the year, households with food insecurity were “uncertain of having, or unable to acquire, enough food for all household members because they had insufficient money and other resources for food.”

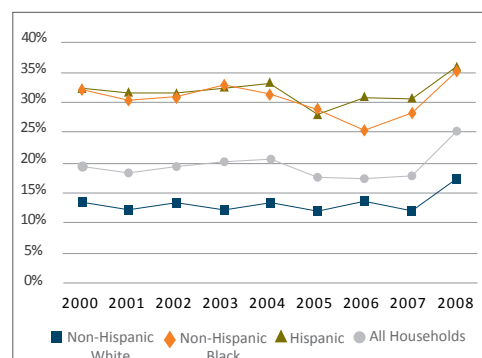
Food insecurity with hunger (very low food security): Households that were “food insecure to the extent that eating patterns of one or more household members were disrupted and their food intake reduced, at least some time during the year, because they could not afford enough food.”

Food insecurity with hunger (very low food security) among children: While many food-insecure households are able to protect their children from reduced food intake, for some households with very low food security, “one or more children were also subject to reduced food intake and disrupted eating patterns at some point during the year.”

Source: Mark Nord, Margaret Andrews, and Steven Carlson, *Household Food Security in the United States, 2008*. Economic Research Services, U.S. Department of Agriculture. Washington, DC, 2009.

Figure 1:

Percent of Children Living in Food-Insecure Households by Race/Ethnicity, 2000–2008



Source: U.S. Department of Agriculture, *Household Food Security in the United States*. Economic Research Service, U.S. Department of Agriculture. Washington, DC, 2001–2009.

Endnotes

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³ All statistics in this document are derived from Mark Nord, Margaret Andrews, and Steven Carlson, *Household Food Security in the United States, 2008*. Economic Research Services, U.S. Department of Agriculture. Washington, DC, 2009.

ISSUE 2: LATINO TRENDS IN CHILD OVERWEIGHT AND OBESITY

Over the past several decades, the prevalence of overweight and obesity rates in the U.S. has skyrocketed, particularly among the youngest Americans.¹ Since 1980, the U.S. obesity rate has doubled among adults and tripled among children.² Hispanic,³ non-Hispanic Black, and American Indian/Alaska Native children are most at risk to meet the clinical definition of overweight or obese. Research indicates that obese children often grow up to become obese adults, and serious chronic health conditions (such as heart disease and diabetes) have been linked to overweight and obesity, even at a young age.

Hispanic children of both sexes are more likely than their non-Hispanic White peers to be overweight or obese at all age groups. Already representing a large segment of the child population, Latinos are a rapidly growing share of U.S. children, particularly children under age five.⁴

Overall, Hispanic children of both sexes are more likely than their non-Hispanic White peers to be overweight or obese.

- A recent study found that in 2007–2008, among children ages two to 19, nearly two in five Hispanic (38.2%) and Black (35.9%) children were overweight or obese (with a BMI at or greater than the 85th percentile for age), along with more than one in four (29.3%) White children.⁵
- About one in five Hispanic (20.9%) and Black (20%) children and about one in seven (15.3%) White children were obese (with a BMI at or greater than the 95th percentile for age).⁶

There are several differences in trends for overweight and obesity by sex and race/ethnicity that are statistically significant.

- Among children ages two to 19, Hispanic boys were more likely than Hispanic girls to be obese.⁷
- Hispanic boys of every age group (ages two to five, six to 11, and 12 to 19) were more likely than White boys to be overweight or obese.⁸
- Overall, Hispanic boys were more than 1.5 times as likely to be overweight and nearly twice as likely as White boys to be obese.⁹

For many children, these trends develop in the first years of life. Among infants and toddlers, Hispanics and American Indians/Alaska Natives have the highest rates of overweight and obesity.

- According to the Centers for Disease Control and Prevention, 13.5% of Hispanic infants younger than 12 months are obese, along with 13.2% of American Indian/Alaska Native, 10.8% of Black, 10.1% of Asian/Pacific Islander, and 9.6% of White infants.¹⁰
- The obesity rate among children younger than two years old has increased over the past decade among all races and ethnicities. Obesity among Hispanic children ages two or younger increased from 16.9% in 1999 to 18.3% in 2008.¹¹

Hispanics continue to have the highest overweight and obesity rates as preschoolers and school-age children, and high prevalence holds steady into adolescence.

- Among preschoolers (children ages two to five), more than one in four Hispanics (27.7%) and Blacks (26%) were overweight or obese, along with about one in six (17.4%) Whites (see Figure 1). Of the Latino preschoolers, nearly one in seven (14.2%) was obese, with boys at higher risk (17.8%) than girls (10.4%).¹²
- By school-age (ages six to 11), more than two-fifths (42.6) of Hispanic children were overweight or obese. One-quarter (25.1%) were obese.¹³
- Prevalence was similar among the pre-teen and teenage group (ages 12 to 19), with two in five Hispanics (41.2%) and Blacks (39.5%) and nearly one in three Whites (31.3%) overweight or obese. In this age group, the Hispanic obesity rate decreased slightly (21.7%), with Hispanic boys more likely to be obese (25.5%) than Hispanic girls (17.5%).

Latino children are at great risk of overweight and obesity throughout all stages of their childhood and adolescence. With prevalence increasing over time, it is clear that without intervention, a significant share of Hispanic children—and therefore the child population in general—will be overweight or obese as adults.¹⁴

Box 1:

Child Overweight and Obesity Defined

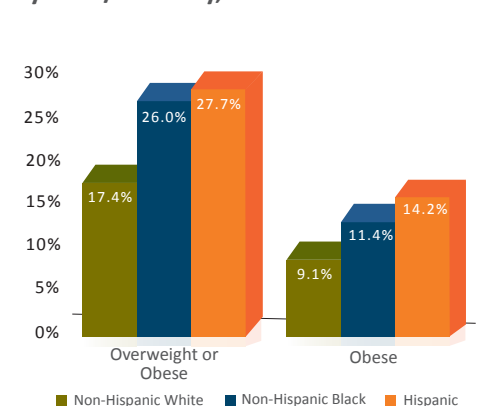
Overweight: Researchers define overweight children as those whose body mass index (BMI) is greater than the 85th percentile (but lower than the 95th percentile) for age and sex, according to child growth charts developed by the Centers for Disease Control and Prevention.

Obesity: Children with a BMI that exceeds the 95th percentile for their age and sex are considered to be obese.

Source: Cynthia L. Ogden et al., “Prevalence of High Body Mass Index in U.S. Children and Adolescents, 2007–2008,” *JAMA* 303, no. 3 (January 2010): 242–249.

Figure 1:

Percentage of Children Ages Two to Five Who Are Overweight or Obese by Race/Ethnicity, 2007–2008



Source: Cynthia L. Ogden et al., “Prevalence of High Body Mass Index in U.S. Children and Adolescents, 2007–2008,” *JAMA* 303, no. 3 (January 2010): 242–249.

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- ³ White House Task Force on Childhood Obesity, *Solving the Problem of Childhood Obesity Within A Generation*. White House Task Force on Childhood Obesity. Washington, DC, 2010.
- ⁴ More than one-fifth (22.1%) of all children under age 18—and about one-quarter (25.5%) of children under age five—are Hispanic. NCLR calculation using data for the U.S. Bureau of the Census, “2009 Annual Social and Economic Supplement,” *Current Population Survey*. Conducted by the Bureau for the Census for the Bureau of Labor Statistics. Washington, DC, 2009, http://www.census.gov/hhes/www/cpssc/cps_table_creator.html (accessed June 2010).
- ⁵ Cynthia L. Ogden et al., “Prevalence of High Body Mass Index in U.S. Children and Adolescents, 2007–2008,” *JAMA* 303, no. 3 (January 2010): 242–249.
- ⁶ Ibid.
- ⁷ Ibid.
- ⁸ Ibid.
- ⁹ Ibid. Using logistic regression, the authors calculated odds ratios to compare prevalence of overweight and obesity by sex and race/ethnicity. A ratio of 1.0 indicates that the rates are equal. In this case, higher values indicate that Hispanics have higher odds of having high BMI values compared to Whites. The researchers estimate that Hispanic boys’ likelihood of having a BMI at or greater than the 85th percentile (“overweight”) is greater than that of White boys, with an odds ratio of 1.65. Similarly, Hispanic boys are more likely than White boys to have a BMI at or greater than the 95th percentile (“obese”), with an odds ratio of 1.8.
- ¹⁰ Centers for Disease Control and Prevention, “Table 18: Summary of Trends in Growth and Anemia Indicators by Race/Ethnicity.” Pediatric and Pregnancy Nutritional Surveillance System, Centers for Disease Control and Prevention. Washington, DC, 2009, http://www.cdc.gov/pednss/pednss_tables/pdf/national_table18.pdf (accessed June 2010).
- ¹¹ Ibid.
- ¹² “Prevalence of High Body Mass Index in U.S. Children.”
- ¹³ Ibid.
- ¹⁴ See M.K. Serdula et al., “Do Obese Children Become Obese Adults?” *Preventive Medicine* 22, no. 2 (1993): 167–177. The researchers find that approximately one-third of obese preschool children and one-half of obese school-age children became obese adults, and likelihood increases among obese children at older ages.

ISSUE 3: FOOD SPENDING IN HISPANIC HOUSEHOLDS

When households do not have sufficient income or resources to meet all basic needs, families make difficult choices about their budgets.¹ Hispanics,² often with lower median incomes and larger average household sizes than non-Hispanics, are particularly at risk for food insecurity. These pressures are intensified in an era of rising food and energy costs and economic recession. Despite spending a disproportionately greater share of their household incomes on food, Hispanics may still spend too little to meet the nutritional needs of their family.

Although the dollar amounts for average annual household expenditures on food are similar for Hispanics and non-Hispanics, Latinos' lower household incomes translate to spending a greater share of their resources on food.

- In 2008, Latinos' average household income after taxes was \$48,955, compared to \$66,590 for non-Hispanic Whites, and the average number of people per household was higher among Latinos (3.2) than Whites (2.4).³
- With less income, Latinos spend less than Whites do overall, but their average food spending represents a greater share of total household expenditures (15.3%) than that of Whites (12.5%).⁴
- As the economic recession set in, food spending rose for all households, with Latinos facing some of the sharpest increases. Hispanics' share of food spending between 2007 and 2008 rose by 6.5%, more than double the change for non-Hispanic households (3.2%).⁵

While on average Latinos spend a larger proportion of their annual expenditures on food than Whites do, Latinos' spending week to week on food is lower than that of Whites and may not be sufficient to meet basic nutritional needs.

- Compared to the U.S. Department of Agriculture's (USDA) Thrifty Food Plan (TFP)—the standard for the least expensive diet that meets basic nutritional guidelines—even food-secure Latinos may only be spending a minimal amount on household food purchases (see Figure 1).⁶
- In 2008, weekly median food spending for food-secure Hispanic households was equal to the cost of the Thrifty Food Plan, while food-secure White households spent about 20% above the cost of the TFP on food.⁷
- In food-insecure households, Hispanics' weekly median spending on food was equal to 83% of the cost of the TFP. Food-insecure White households' weekly median food spending was about 95% of the TFP value.⁸

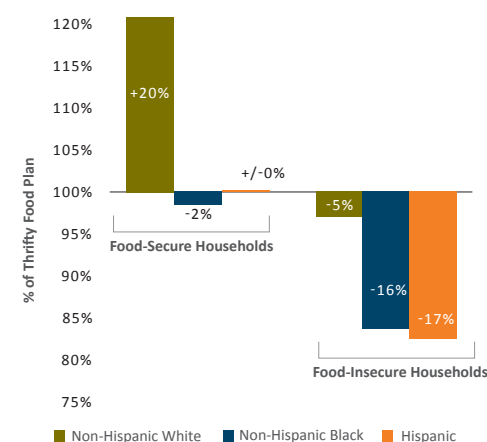
Recent increases in the cost of both food and household utilities, such as energy and fuel costs, deplete Latino families' food budgets and increase the risk of food insecurity. Since food spending is more discretionary than other household costs, families tighten their belts in periods of economic loss.

- The annual percentage change of food prices was higher by several percentage points in 2007 (4%) and 2008 (5.5%) than previous years.⁹ With double-digit increases in the cost of food staples such as eggs, dairy, and cereals, food dollars in this period did not buy as many goods as they had several years earlier.¹⁰
- Rising energy costs also force low-income families to make difficult decisions about heating (or cooling) their households and putting food on the table, a dilemma referred to as "heat or eat" (or "cool or eat").¹¹ Hispanics' average share of household spending on utilities, fuels, and public services (such as water) has risen steadily, increasing by 17.5% between 2000 and 2008—an increase that is double that for non-Hispanics (8.5%) over the same time period.¹²
- A study by the Children's Sentinel Nutrition Assessment Program (now Children's HealthWatch) found that Latino children whose families had difficulty paying for energy costs were two to three times more likely to be food insecure than Latino children living in energy-secure families.¹³

Although Hispanic families are spending proportionally more than non-Hispanic families on food, there is ample evidence that their food budgets may be insufficient to meet the nutritional needs of all members of the household—including children.

Figure 1:

Weekly Household Food Spending Relative to the USDA Thrifty Food Plan by Race/Ethnicity and Food Security Status, 2008



Source: Mark Nord, Margaret Andrews, and Steven Carlson, *Household Food Security in the United States, 2008*. Economic Research Services, U.S. Department of Agriculture. Washington, DC, 2009.

Box 1:

Defining the Thrifty Food Plan

Thrifty Food Plan: This program was developed by the U.S. Department of Agriculture to help families purchase the least expensive market basket of foods that meet basic age- and gender-specific nutritional standards.

Originally designed for temporary use when household funds are low, it is used as a basis for setting federal poverty guidelines and is a standard for other federal programs, including the Supplemental Nutrition Assistance Program (SNAP), formerly known as food stamps.

Endnotes

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³ U.S. Bureau of Labor Statistics, “Hispanic or Latino Origin of Reference Person: Shares of Average Annual Expenditures and Sources of Income,” *Consumer Expenditure Survey, 2008*. Washington, DC, 2009.

⁴ Ibid.

⁵ Ibid, various years.

⁶ Mark Nord, Margaret Andrews, and Steven Carlson, *Household Food Security in United States, 2008*. Economic Research Services, U.S. Department of Agriculture. Washington, DC, 2009.

⁷ Ibid.

⁸ Ibid.

⁹ Economic Research Services, U.S. Department of Agriculture, *Food CPI and Expenditures: CPI for Food Forecasts*. Data collected by the Bureau of Labor Statistics, U.S. Department of Labor. Washington, DC, 2010, <http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/cpiforecasts.htm> (accessed July 2010).

¹⁰ Ibid.

¹¹ Stephanie Ettinger de Cuba, John Cook, and Deborah A. Frank, *Balancing Acts: Energy Insecurity Among Low-Income Babies and Toddlers of Color Increases Food Insecurity and Harmful Health Effects* (Boston, MA: Children’s HealthWatch [formerly Children’s Sentinel Nutrition Assessment Program], 2007).

¹² *Consumer Expenditure Survey*, various years.

¹³ *Balancing Acts*. The authors found that compared to children in energy-secure Latino families, Latino babies and toddlers in households with moderate energy insecurity were more than twice as likely to be food insecure—and Latino babies and toddlers in families with severe energy insecurity were more than three times as likely to live in a food-insecure home.

ISSUE 4: THE FOOD ENVIRONMENT AND LATINOS' ACCESS TO HEALTHY FOODS

While the availability of household resources for food is one factor in Latino¹ children's nutritional intake, the "food environment"—or the availability of nutritious food at affordable prices in the local neighborhood—also plays an important role.² Latinos and other racial and ethnic minorities are more likely than Whites to live in communities that are "food deserts," where there is limited or no access to healthy, affordable food. The food environment, coupled with transportation concerns, can create powerful structural barriers to Latino families' healthy food access.

Hispanic families are less likely than non-Hispanic White families to live in neighborhoods where healthy foods are available and sold at affordable prices.

- Supermarkets generally offer a wider variety of healthy foods at affordable prices than smaller grocery stores and other retailers such as convenience stores, leading researchers to measure proximity to supermarkets as an indicator of healthy food access.³ One study found that Hispanic neighborhoods have one-third (32%) as many supermarkets as non-Hispanic neighborhoods, a statistically significant difference (see Figure 1).⁴
- While smaller neighborhood retailers are often important community staples and sources of culturally relevant food, these stores often have a lower stock of healthy foods. In an Hispanic community in Rhode Island, researchers found that only two of 21 stores sold a sufficient mix of foods to fill a market basket based on the U.S. Department of Agriculture guidelines.⁵ In these two stores, the cost of the market basket was 40% higher than the national average for the same goods.⁶
- There may also be variation in smaller stores' stock of healthy foods based on neighborhood income levels. Researchers in New York compared the availability of certain healthful food items in bodegas in two neighborhoods. East Harlem—where more than one-third of the population lived in poverty, and 90% of residents were Hispanics or non-Hispanic Blacks—had a higher total number of bodegas than the Upper East Side, where 6% of residents lived below the poverty line and 84% were non-Hispanic Whites. Yet, only 9% of East Harlem bodegas carried all healthy food items, compared to 48% of bodegas on the Upper East Side.⁷

Figure 1:

Access to Chain Supermarkets

Hispanic neighborhoods have about one-third as many chain supermarkets as non-Hispanic neighborhoods.

Hispanic



Non-Hispanic



Source: Lisa M. Powell et al., "Food Store Availability and Neighborhood Characteristics in the United States," *American Journal of Preventive Medicine* 44 (2007): 189–195.

For Latinos living in neighborhoods where affordable, healthy food is scarce, families may have difficulty obtaining reliable transportation or may travel long distances to access foods in other communities.

- In 2003, 13.4% of Hispanic households and 26.6% of Black households had no access to a vehicle, compared to a rate of 8.6% for all households in the U.S.⁸ Additionally, in many one-car households, family members use vehicles to commute to work, limiting the time that households make car trips for other purposes such as food shopping.
- Reliance on public transit often limits the frequency of low-income families' trips to purchase food as well as the quantity of food that can be transported, which poses a particular problem for perishable food items.⁹ One study of the predominantly Latino neighborhood of East Austin found that bus routes are designed as corridors to downtown areas, making travel between neighborhoods more difficult and resulting in longer trip times.¹⁰
- Hispanics living in rural communities—which are much less likely than urban or suburban communities to have public transit systems—face even greater mobility challenges. About 20% of all rural counties are food deserts where residents must travel more than ten miles to a supermarket.¹¹

Research has shown that there is a correlation between the availability and affordability of healthy foods and nutritional outcomes in children and adults, such as intake of healthy items or risk of weight gain.¹²

- There may also be a correlation between increased access to chain supermarkets and children's decreased body mass index (BMI), a measure of overweight and obesity. For every chain supermarket per 10,000 people in a community, BMI slightly decreases among adolescents (ages 12–19) of all races/ethnicities.¹³
- One study found that during the period between kindergarten and third grade, children living in areas with high fruit and vegetable prices gained more weight than children living in areas where fruit and vegetables were relatively inexpensive—a finding that was most pronounced among Hispanic and Asian children.¹⁴
- In North Carolina, researchers studied four small neighborhood stores (*tiendas*) that served Latino families. Two stores increased their stock of healthy food items by selling small packs of fruits and vegetables. Compared to customers of the two control stores, which had no change in consumption, customers who shopped at the test stores increased their daily fruit and vegetable intake by a full serving.¹⁵

Latino children are more likely than White children to be living in neighborhoods with structural barriers to healthy food access. The food environment is a critical factor in Latino families' ability to purchase all of the food needed to meet nutritional needs of all members of the household.

Endnotes

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- ³ For an extensive literature review of the research, see Sarah Treuhaft and Allison Karpyn, *The Grocery Gap: Who Has Access to Healthy Food and Why It Matters* (New York: Policy Link and The Food Trust, 2010).
- ⁴ Lisa M. Powell et al., “Food Store Availability and Neighborhood Characteristics in the United States,” *American Journal of Preventive Medicine* 44 (2007): 189–195.
- ⁵ The market baskets were based on the Thrifty Food Plan guidelines, which were developed by the U.S. Department of Agriculture to help families purchase the least expensive market basket of foods that meet basic age- and gender-specific nutritional standards. Originally designed for temporary use when household funds are low, it is used as a basis for setting federal poverty guidelines and is a standard for other federal programs, including the Supplemental Nutrition Assistance Program (SNAP), or food stamps. Sheldon M. Gans et al., “Availability, Affordability, and Accessibility of A Healthful Diet in a Low-Income Community, Central Falls, Rhode Island, 2007–2008,” *Preventing Chronic Disease* 7, vol. 2 (2010): 1–7.
- ⁶ Ibid.
- ⁷ Carol R. Horowitz, et al., “Barriers to Buying Healthy Foods for People with Diabetes: Evidence of Environmental Disparities,” *American Journal of Public Health* 94, no. 9 (2004): 1549–1554.
- ⁸ Bureau of Transportation Statistics, “Table 4-3a Households Without a Vehicle,” *Transportation Statistics Annual Report*. Bureau of Transportation Statistics. Washington, DC, 2005.
- ⁹ Leslie Mikkelsen and Sana Chehimi, *The Links Between the Neighborhood Food Environment and Childhood Nutrition* (Princeton, NJ: Robert Wood Johnson Foundation, 2007).
- ¹⁰ Sustainable Food Center, *Access Denied: An Analysis of Problems Facing East Austin Residents in Their Attempts to Obtain Affordable, Nutritious Food* (Austin, TX: Sustainable Food Center, 1995).
- ¹¹ Lois Wright Morton and Troy C. Blanchard, “Starved for Access: Life in Rural America’s Food Deserts,” *Rural Realities* 1, no. 4, 2007.
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ISSUE 5: THE LINKS BETWEEN FOOD INSECURITY AND LATINO CHILD OBESITY

In recent years, researchers have increasingly investigated the potential correlations between food-insecure households and childhood obesity.¹ While most studies have not found a direct relationship between food insecurity and obese status, evidence does show that household food insecurity is related to an increased risk of overweight and obesity—particularly among Latino² children. As food insecurity is often cyclical, fluctuating between times of “have” and “have not,” the seemingly paradoxical link between child hunger and obesity may be related to coping mechanisms that families adopt, such as substituting energy-dense foods for lower-calorie, more nutritious items when resources are low, or overconsuming food when it becomes available.³

Recent studies have found links between Latino child food insecurity and hunger and increased risk for overweight or obesity.

- An analysis of Early Childhood Longitudinal Study Birth Cohort data found that infants and toddlers living in households with hunger (very low food security) are 61% more likely to be overweight than young children in food-secure households.⁴
- Another study of the National Health and Nutrition Examination Survey (1999–2002) found that, controlling for race, ethnicity, gender, age, and poverty level, child food insecurity was associated with risk of child overweight.⁵
- Researchers also found that Mexican American⁶ children who were food insecure were more likely to be at risk for overweight (42.2%) than Mexican American children from homes without food insecurity among children (36.3%)—a statistically significant difference.⁷

In times of food insecurity, when resources are low and families fear running out of food, children and families are likely to eat low-cost, high-calorie foods.

- Researchers have found that when there is insufficient money for healthy diets, families adopt a deliberate strategy to stretch the budget and purchase lower-cost foods that are energy-dense (high in calories) to stave off hunger.⁸
- Foods that have the most calories per dollar (“bang for the buck”) are often “empty calories” that lack important nutrients and contain added sugars and fats. According to one study, “Fats and oils, sugar, refined grains, potatoes, and beans represented some of the lowest-cost options and provided dietary energy at minimal cost.”⁹ Of these options providing the most energy per dollar, only potatoes and beans represent nutrient-rich choices. Lower-calorie, perishable products such as fresh produce and lean meats provided less energy per dollar spent.¹⁰ For food-insecure families seeking to have enough food to ensure that no one is hungry, spending on low-calorie foods may feel too risky when the same dollar amount can buy high-calorie foods that feel more filling.
- A study of multiethnic Minneapolis middle and high school students (of which about 6% were Latino) found that, compared to food-secure youth, children from food-insecure households took in a higher percentage of calories from fat. Children who experienced no hunger were more likely than children experiencing hunger in the past year to meet the recommended dietary guideline of consuming fewer than 30% of calories from fat (see Table 1).¹¹
- The study also found that food-insecure children were more likely to be obese (with a body mass index exceeding the 95th percentile for age). Children who reported experiencing no hunger in the past year were the least likely to be obese.¹²

Family food insecurity and child hunger often occurs in cycles.

- Research has found that children may be somewhat insulated from initial effects of food insecurity by their parents, who are more likely to feed children first and skip meals themselves, reducing children’s energy intake only when food shortages become acute.¹³
- On days when food becomes available, family members may overcompensate by eating more.¹⁴ Researchers studying low-income Mexican American families have suggested that in households experiencing cyclical food insecurity, parents may be willing to allow their children to eat more snacks when resources for food are again available.¹⁵
- Cyclical food insecurity may also affect a person’s metabolism, increasing a person’s propensity to maintain or increase weight. Researchers hypothesize that, over time, periodic reductions in food intake may result in physiological changes whereby the body attempts to build energy reserves by storing more calories as fat.¹⁶

Latino children are already at great risk of both family food insecurity and overweight and obesity. Understanding the complex links between these concerns can help target interventions to improve Latino children’s nutritional outcomes.

Table 1:

Children Eating Fewer than 30% of Daily Calories from Fat by Child Hunger Frequency, Minneapolis, MN, 1998–1999

Child hunger frequency*	Percentage of children with fewer than 30% of daily calories from fat
Almost every month	44.7%
Some months	43.9%
One or two months	68.8%
Zero months	53.9%

* This trend was statistically significant at a probability level of .010.

Source: Rachel Widome et al., “Eating When There is Not Enough to Eat: Eating Behaviors and Perception of Food Among Food-Insecure Youths,” *American Journal of Public Health* 99, no. 5 (2009): 822–828.

Endnotes

- ¹ This profile was authored by Kara D. Ryan, Research Analyst with the Health Policy Project at the National Council of La Raza (NCLR), with oversight and substantive input from Jennifer Ng'andu, Deputy Director of the Health Policy Project, and substantive support from Brad D. Johnson, consultant. Kari Nye, Assistant Editor, Tiptavee Thongtavee, Graphic Designer, and Kelly Isaac, Production Assistant and Graphic Designer, provided technical support and prepared the document for publication. NCLR is the largest national Hispanic civil rights and advocacy organization in the United States.
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- ⁶ Many studies analyzing overweight and obesity in the Latino population collect data among the Mexican American community, the largest subgroup of Latinos in the United States. While these data can be used to note trends in the Latino community, they do not reflect the full diversity of the Latino population in the United States.
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ISSUE 6: THE IMPLICATIONS FOR HISPANIC CHILDREN LIVING WITH FOOD INSECURITY

Food insecurity is a serious problem that threatens Latino¹ children's ability to grow, learn, and thrive.² One in three (33.9%) Hispanic children lives in a food-insecure household, where families do not always have enough resources for everyone in the household to eat full and nutritious meals.³ The physical and mental effects of food insecurity and hunger disadvantage children from a young age and have lasting effects on their health outcomes as well as social and school performance, hampering future achievement and quality of life into adulthood.

Household food insecurity is linked to problems or delays in early childhood growth and development for Latino infants and toddlers.

- In a multiethnic study of children under three years of age, researchers asked parents and caregivers to assess concerns about their children's development in eight key areas. After controlling for a number of factors (such as children's health insurance status and parents' educational achievement), parents from food-insecure households were two-thirds more likely than those in food-secure households to report that their children experienced some developmental risk.⁴
- Among low-income Latino families, parents from food-insecure households are more than twice as likely as parents living in low-income but food-secure homes to identify significant concerns about their infants' and toddlers' developmental progress (see Figure 1).⁵
- Young children living in households with very low food security are also much more likely than those in food-secure households to develop iron deficiency anemia, a nutritional shortage of dietary iron that, left untreated, can have lifelong negative effects on growth and development.⁶ Researchers note that Latino, Black, and Asian children are particularly at risk of developing the condition.⁷

Children of all age groups—from infancy to adolescence—are more likely to be in fair or poor health if they grow up in food-insecure households.

- Infants and toddlers from food-insecure households are nearly one-third more likely than young children from food-secure households to have been hospitalized, and nearly two times as likely to be assessed by their parents as being in fair or poor health.⁸
- A study of families with preschool and school-age children, including both English- and Spanish-dominant Mexican American⁹ families, found that children living in food-insufficient households were more likely to have poor health, experiencing more frequent headaches, stomachaches, and colds than their food-sufficient peers.¹⁰
- In a Massachusetts study of preschool and school-age children, about 40% of whom were of Puerto Rican descent, severe hunger was a predictor of chronic illness, internalization of problems, and increased likelihood of depression and anxiety.¹¹

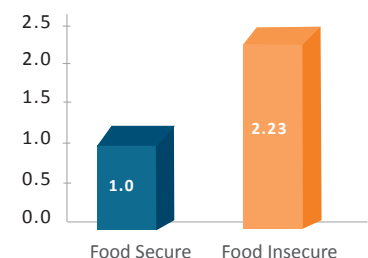
Hungry children may have more difficulty learning, as evidenced by comparatively lower school performance levels, and are more likely to suffer problems with mental or behavioral health.

- A complex longitudinal study assessed the impact of food insecurity on children's academic and social performances between kindergarten and third grade. Although there were gendered differences among the outcomes, food insecurity in kindergarten was associated with smaller increases in mathematics and reading test scores between kindergarten and third grade for both boys and girls, compared to their food-secure peers.¹²
- In a sample of children ages six through 11, children from food-insufficient households had lower math scores and were more likely to repeat a grade than their food-sufficient peers.¹³ Researchers also found that food-insufficient children and teens were more likely to have difficulty getting along with other children and to have seen a psychologist.¹⁴
- Finally, a sobering study of 15- and 16-year-old adolescents—about one-third of whom were Mexican American—found that, compared to teenagers from food-sufficient households, food-insufficient teenagers were two times more likely to have thoughts of death, three times more likely to express a desire to die, four times more likely to suffer from dysthymia (a depressive mood disorder), and five times more likely to have attempted suicide.¹⁵

The documented negative and long-lasting effects of child hunger and food insecurity underscore the urgency of these threats to Latino children's well-being and future achievement.

Figure 1:

Odds* of Significant Developmental Concerns Identified by Low-Income Latino Parents of Children Under Age Three by Household Food Security Status, 2004–2005



*The higher value indicates that these parents are more likely to have significant concerns about their young children's developmental progress.

Source: Children's Sentinel Nutrition Assessment Program, *The Impact of Food Insecurity on the Development of Young Low-Income Black and Latino Children* (Washington, DC: Joint Center for Political and Economic Studies Health Policy Institute, 2006).

Endnotes

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- ⁹ Many studies analyzing food sufficiency within the Latino population collect data among the Mexican American community, the largest subgroup of Latinos in the United States. While these data can be used to note trends in the Latino community, they do not reflect the full diversity of the Latino population in the United States.
- ¹⁰ Katherine Alaimo et al., “Food Insufficiency, Family Income, and Health in U.S. Preschool and School-Aged Children,” *American Journal of Public Health* 91, no. 5 (2001): 781–786.
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ISSUE 7: THE IMPLICATIONS OF OVERWEIGHT AND OBESITY FOR LATINO CHILDREN

Children who suffer from obesity and overweight are more likely than children of normal weight to suffer from a lifetime of serious physical and mental health problems that are difficult—and expensive—to manage.¹ More Latino² children are becoming overweight or obese, increasing the odds that they will grow up to be adults with poor physical and mental health outcomes.

Latino children who are overweight or obese are likely to grow up to become obese adults.

- An extensive literature review of longitudinal studies found that overweight children are more than two times as likely as children of normal weight to become overweight adults.³
- Researchers have predicted that by age five, 5% of U.S. children (or about 3.6 million at the time of the study) have a greater than 70% chance of becoming overweight adults; Hispanic children have the highest odds of growing up to become overweight.⁴

Latino children who are overweight or obese have high odds of developing heart disease, diabetes, and insulin resistance—conditions that often require lifetime management and may result in premature death.

- Obesity is linked with a number of chronic diseases, including heart disease, stroke, high blood pressure, diabetes, asthma, certain cancers, and sleep apnea.⁵
- Even before obese children reach adulthood, some have already developed physical signs of heart disease. In a study of children ages five to 17, 70% of obese children had at least one risk factor for cardiovascular disease, and 39% had two or more (see Table 1).⁶
- Researchers have found that among obese adults, people who had been overweight or obese as children were more likely than those who became obese in adulthood to have developed metabolic syndrome, a collection of risk factors for cardiovascular disease related to insulin resistance (such as hypertension and abnormal glucose metabolism).⁷
- Another study determined that obesity status at age seven is a statistically significant predictor for the presence of metabolic syndrome in adulthood.⁸

Obese Latino children and adolescents are more likely to have an impaired quality of life—even if they exhibit no other outward physical signs of chronic disease.

- In a sample of children ages five to 18, about half of whom were Hispanic, obese children were more than five times more likely than children with a normal body mass index (BMI) to be assessed as having a “health-impaired” quality of life, indicating that their physical and emotional health status hinders their ability to carry out everyday functions. Researchers found obese children’s quality of life impairment to be similar to children who had been diagnosed with cancer.⁹
- Quality of life was assessed as “health-impaired” even in the absence of other health conditions. Most obese children in the sample had yet to develop “readily apparent” signs of other chronic diseases linked to obesity. However, researchers note that two indicators that were common among the obese children—dyslipidemia and hyperinsulinemia—are “silent precursors to cardiovascular disease and diabetes.”¹⁰

Hispanic children who are overweight or obese may also be more likely to experience low self-esteem and social stigmatization.

- Obese children’s perceptions about body size may form at an early age. One study found that as early as preschool, Hispanic children who were overweight or at risk for overweight were less likely than normal-weight Hispanic children to assign positive values or traits to drawings of overweight figures.¹¹
- A longitudinal study of children ages 13–18 examined the social networks and isolation of overweight teenagers compared to their normal-weight peers. Social marginalization was present for overweight children and was stronger among Hispanic boys than Hispanic girls.¹²
- In a community-based longitudinal study, researchers found that child anxiety and depression correlated with increases in BMI, particularly among girls.¹³

With such great risk for childhood overweight and obesity, Latino children have the highest risk of growing up to become obese adults. Along the way, these children are likely to suffer physical, social, and emotional ailments that impact their long-term healthy development and quality of life.

Table 1:

Percentage of Children Ages Five to 17 with Risk Factors for Cardiovascular Disease, by Body Mass Index (BMI) for Age

Child's BMI for Age	At least one risk factor	At least two risk factors	At least three risk factors	At least four risk factors
24th percentile or lower*	25%	5%	1%	0%
25th to 49th percentile	29%	5%	1%	0%
50th to 84th percentile	36%	9%	2%	0%
85th to 94th percentile (overweight)	51%	19%	5%	1%
95th or greater percentile (obese)	70%	39%	18%	5%
99th or greater percentile for age (subset of obese)	84%	59%	33%	11%

* Children with a BMI less than the fifth percentile for age are considered to be underweight.

Source: David S. Freedman et al., “Cardiovascular Risk Factors and Excess Adiposity Among Overweight Children and Adolescents: The Bogalusa Heart Study,” *Journal of Pediatrics* 150, no. 1 (2007): 12–17.

Endnotes

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ISSUE 8: LINKS BETWEEN LATINO CHILDREN'S NUTRITION AND ACCESS TO HEALTH CARE

Health care providers can monitor children's development and screen for early warning signs of health conditions related to hunger or obesity; they are sources of nutrition advice to parents and families.¹ However, Latinos² often have poor access to the affordable, culturally competent health care services that play a prominent role in children's nutritional outcomes.

Latinas are at risk of inadequate access to prenatal care, which is an important source of nutrition advice for pregnant women.

- A mother's nutritional intake during pregnancy is an important factor in the health and development of children. For instance, both high birth weight and low birth weight³—outcomes that are affected by maternal nutrition—are associated with greater odds of childhood obesity later in life.⁴
- Regular prenatal care can provide counseling and monitoring for pregnant Latinas to help them meet nutritional goals. In a multiethnic California study of pregnant women (in which about 29% of participants were Latinas), provider advice regarding target weight gain played a significant role in the amount of weight actually gained during pregnancy.⁵
- However, affordable health care is often inaccessible for pregnant Latinas, putting them at risk of receiving late prenatal care or none at all.⁶ In 2006, 5% of all Hispanic infants were born to women with late or no prenatal care, a rate nearly twice as high as that (2.3%) for non-Hispanic White infants.⁷

Many Latino families with children are unable to access pediatric monitoring and counseling, which are important tools for families whose children show signs of under- or over-nutrition.

- Clinical monitoring of children's nutrition outcomes is important because parental perception of weight status is often erroneous. In a study of White, Black, and Mexican American⁸ mothers, researchers estimated that about one-third of all mothers misclassified their children's weight status; no statistically significant differences were observed by race/ethnicity.⁹
- According to the American Academy of Pediatrics, pediatricians should measure and track children's height and weight, calculating and plotting body mass index (BMI) every year beginning at age two.¹⁰ However, Latino children are less likely to receive this monitoring. Hispanic children are less likely (89.7%) than White (95.8%) and Black (93.4%) children to have ever had their height and weight recorded by a health care provider.¹¹ While Latino children's greater likelihood of uninsurance may explain much of this gap, other barriers to care, such as lack of language access, may play a role. Just 82.3% of uninsured Latino children had been measured by a provider, compared to 97.6% of uninsured White children (see Figure 1).¹²
- Families of uninsured Hispanic children are also less likely than those of insured Hispanic children to have received advice on healthy eating from a health care provider. About three-fifths (61%) of Latino children with private insurance and more than half (54.6%) of Latino children with public insurance had a doctor or nurse who had provided nutrition information to families, compared to about two-fifths (44.3%) of uninsured Latino children.¹³

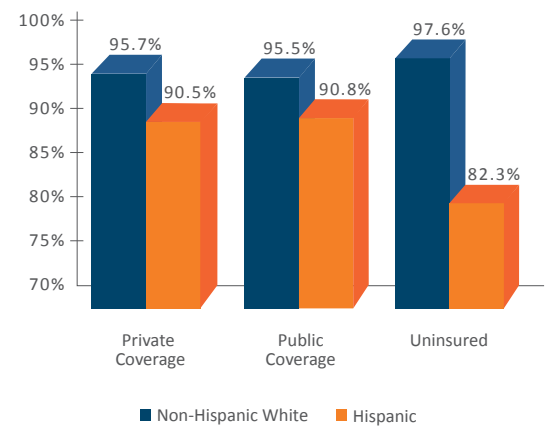
Even when Latino families have access to health care, parents may find their provider's advice on improving children's nutrition to be insufficient.

- In a Massachusetts study of parents of overweight children, parents were interviewed about their satisfaction with the quantity and quality of nutritional counseling they received during a recent pediatric primary care visit. After controlling for income and educational levels, researchers found that Latino, Black, and Asian parents gave lower quality ratings than White parents to the nutrition and physical activity counseling received during the visit.¹⁴
- Many approaches to this counseling may not take into account differences in cultural perceptions and values held by Latino families. For instance, qualitative research has found that among Latinas, focusing on integrating healthy eating for families is more effective than centering discussions on the children's weight.¹⁵ Additionally, Latino families may be more receptive to nutrition plans that integrate healthy substitutions into their traditional meals.¹⁶

Latino families often face multiple barriers to health care that prevent them from accessing important clinical resources to monitor their children's nutritional intake. In the long term, improving health care access and quality for these families is an important strategy for improving Hispanic child nutrition.

Figure 1:

Children Who Have Ever Had their Height and Weight Measured by a Health Care Provider by Race/Ethnicity and Health Insurance, 2006



Source: Agency for Healthcare Research and Quality, "Children Who Have Ever Had Their Height and Weight Measured by a Health Provider, by Ethnicity," <http://nhqrnet.ahrq.gov/nhqrdr/jsp/nhqrdr.jsp?catId=40404&msrId=60401&tableType=2&msrIdRO=60401&tableTypeRO=2&subGrpIdCB=2&PopCatIdCB=33#snhere> (accessed September 2010).

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- ³ Despite poor access to prenatal care, Latinas are generally likely to have good birth outcomes. Nationally, low birth weight among Latinas is similar to that of non-Hispanic White women. However, disaggregated data for Hispanic subgroups show that risk of low infant birth weight is greater for mothers of Puerto Rican descent. See Child Trends, *Percentage of Infants Born at a Low and Very Low Birthweight, By Mother's Detailed Race, Hispanic Origin, and Smoking Status, Selected Years 1970–2007* (Washington, DC: Child Trends, 2010), http://www.childtrendsdatabank.org/sites/default/files/57_tab01.pdf (accessed September 2010).
- ⁴ White House Task Force on Childhood Obesity, *Solving the Problem of Childhood Obesity within a Generation* (Washington, DC: White House Task Force on Childhood Obesity, May 2010).
- ⁵ Women whose health care providers advised them to gain weight according to the Institute of Medicine (IOM) guidelines were more likely to meet target weight. Women whose providers advised gaining less than the IOM guidelines were more likely to gain less, and women whose providers advised gaining more than the IOM guidelines were more likely to gain more. However, Black women and Latinas were more likely than White women to gain weight below the IOM target guidelines. See Naomi E. Stotland et al., “Body Mass Index, Provider Advice, and Target Gestational Weight Gain,” *American College of Obstetricians and Gynecologists* 105, no. 3 (2005): 633–638.
- ⁶ An important factor in health care access is insurance coverage, and Latinos are more likely to be uninsured than any other racial or ethnic group in the U.S. In 2009, nearly one in three (32.4%) Latinos had no form of health coverage, and the uninsurance rate among Hispanic females of childbearing age (15–44) was 39.7%. NCLR calculation using data for the U.S. Bureau of the Census, “2010 Annual Social and Economic Supplement,” *Current Population Survey*. Conducted by the Bureau of the Census for the Bureau of Labor Statistics. Washington, DC, 2010, http://www.census.gov/hhes/www/cpstc/cps_table_creator.html (accessed September 2010).
- ⁷ Infants of Central or South American descent were most likely to be born to mothers with late or no prenatal care (5.8%), followed by Mexican (5%), Puerto Rican (4.1%), and Cuban (3.2%) infants and 3.1% of infants of other Hispanic origin. Child Trends, *Percent of All Births to Mothers Receiving Late or No Prenatal Care by Detailed Race and Hispanic Origin of Mother and Age, Selected Years 1970–2006* (Washington, DC: Child Trends, 2010), http://www.childtrendsdatabank.org/sites/default/files/25_tab01.pdf (accessed September 2010).
- ⁸ Mexican Americans are the largest subgroup of Latinos in the United States, and while these data can be used to note trends in the Latino community, they do not reflect the full diversity of the Latino population in the United States.
- ⁹ L. Michelle Maynard et al., “Maternal Perceptions of Weight Status of Children,” *Pediatrics* 111, no. 5 (2003): 1226–1231.
- ¹⁰ American Academy of Pediatrics, *AAP Policy Statement: Prevention of Pediatric Overweight and Obesity* (Washington, DC: AAP, 2003).
- ¹¹ Agency for Healthcare Research and Quality, “Children Who Ever Had Their Height and Weight Measured by a Health Provider, by Ethnicity,” <http://nhqrnet.ahrq.gov/nhqrdr/jsp/nhqrdr.jsp?catId=40404&msrId=60401&tableType=2&msrIdRO=60401&tableTypeRO=2&subGrpIdCB=2&PopCatIdCB=33#snhere> (accessed September 2010).
- ¹² Ibid.
- ¹³ Agency for Healthcare Research and Quality, “Children ages 2–17 for whom a health provider gave advice about health eating, by ethnicity United States, 2006,” <http://nhqrnet.ahrq.gov/nhqrdr/jsp/nhqrdr.jsp?catId=40404&msrId=60406&tableType=2&msrIdRO=60406&tableTypeRO=2&subGrpIdCB=2&PopCatIdCB=33#snhere> (accessed September 2010).
- ¹⁴ Else M. Tavares et al., “Parental Perceptions of Overweight Counseling in Primary Care: The Roles of Race/Ethnicity and Parent Overweight,” *Obesity* 16, no. 8 (2008): 1794–1801.
- ¹⁵ Patricia B. Crawford, “Counseling Latina Mothers of Preschool Children about Weight Issues: Suggestions for a New Framework,” *Journal of the American Dietetic Association* 104 (2004): 387–394.
- ¹⁶ Ibid.

ISSUE 9: LATINO PARTICIPATION IN THE SPECIAL SUPPLEMENTAL NUTRITION PROGRAM FOR WOMEN, INFANTS, AND CHILDREN (WIC)

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is one of the primary federal nutrition programs that Latinos¹ can turn to for food assistance.² The WIC program serves millions of low-income Latino women, infants, and young children who are at nutritional risk, helping families purchase foods that are critical to children's healthy development (see Box 1).

The WIC program is an important resource for Hispanic families with children, who make up a large share of program participants throughout the country.

- More than four million Latino women and children accessed WIC resources in 2008, accounting for more than two-fifths (42.1%) of all participants (see Figure 1).³ Of all WIC participants, Hispanics made up 39.8% of all women, 38.8% of all infants, and 45% of all children. Moreover, Latinas made up half (50.8%) of all breastfeeding WIC participants.
- That year, WIC served more than three million Latino infants and toddlers, or more than three-fifths (61.2%) of all Latino children under age five.⁴ About two-thirds of Latino infants and children participating in WIC lived in poverty.⁵

WIC has been shown to increase household food security as well as children's intake of a number of nutrients that are important for healthy growth and development.

- A longitudinal study of WIC participants—about 30% of whom were Hispanic—found that accessing WIC services reduced acute hunger and household food insecurity among pregnant women and children.⁶ The researchers found that the families who benefitted the most were those who participated in WIC for longer periods of time.⁷
- WIC participation is linked to increased access to important nutrients, including dietary iron. One study found that among children ages one to four living at or below 130% of the federal poverty level, WIC participation increased children's intake of ten of 15 nutrients studied, with significant increases in the recommended daily intake of iron and zinc.⁸ WIC participation was not associated with any change in children's intake of fat, saturated fat, or cholesterol.⁹

Children with families participating in WIC are more likely to have better health and nutrition outcomes than eligible children in families with problems accessing the WIC program.

- Children's HealthWatch finds that, compared to children who are eligible but not receiving WIC benefits, children in WIC households are 24% more likely to be within normal developmental limits for age and 16% more likely to be in good health.¹⁰
- A study of low-income families with infants and toddlers found that Hispanic children in families receiving WIC benefits were more likely to be at a healthy height and weight for age compared to Hispanic children who were eligible for but not receiving WIC services.¹¹ The researchers found no association between participation in WIC and overweight in Latino children.¹²
- A multisite and multiethnic study of WIC-eligible families with children age 12 months or younger found that, compared to infants in families in the WIC program, infants whose families had difficulty accessing WIC services were more likely to be short or underweight for their age.¹³ Parents and caregivers who faced access barriers to WIC—such as problems with transportation—were also more likely than WIC participants to report their infants to be in fair or poor health.¹⁴

The WIC program, which has been shown to improve Latino children's nutritional intake and developmental outcomes, is a necessary resource for families who are living with or teetering on food insecurity and hunger.

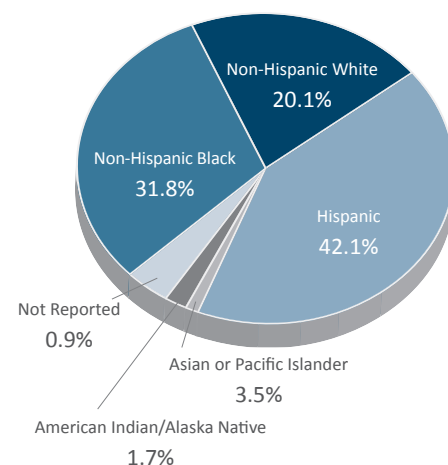
Box 1:

The WIC Program Defined

WIC is a federal grant program administered by the Food and Nutrition Service of the U.S. Department of Agriculture that is designed to provide nutrition assistance to pregnant women and young children. To be eligible, participants must be women who are pregnant, post-partum, or breastfeeding, or infants and children up to age five living at or below 185% of the federal poverty level who have also been designated at "nutritional risk" by a health care professional. WIC provides participating families with vouchers to purchase specific nutrient-rich foods (such as eggs, milk, peanut butter, beans, fruits and vegetables, and whole-grain options) and offers nutrition education and breastfeeding support.

Figure 1:

Women, Infants, and Children Participating in WIC by Race/Ethnicity, 2008



Source: Patty Connor et al., *WIC Participant and Program Characteristics 2008*. Food and Nutrition Service, Office of Research and Analysis, U.S. Department of Agriculture. Alexandria, VA, 2010.

Endnotes

- ¹ The terms “Hispanic” and “Latino” are used interchangeably by the U.S. Census Bureau and throughout this document to refer to persons of Mexican, Puerto Rican, Cuban, Central and South American, Dominican, Spanish, and other Hispanic descent; they may be of any race. Furthermore, unless otherwise noted, estimates in this document do not include the 3.9 million residents of Puerto Rico.
- ² This profile was authored by Kara D. Ryan, Research Analyst with the Health Policy Project at the National Council of La Raza (NCLR), with substantive input and oversight from Jennifer Ng’andu, Deputy Director of the Health Policy Project. Kari Nye, Assistant Editor, and Tiptavee Thongtavee, Graphic Designer, provided technical support and prepared the document for publication. NCLR is the largest national Hispanic civil rights and advocacy organization in the United States.
- ³ Patty Connor et al., *WIC Participant and Program Characteristics 2008*. Food and Nutrition Service, Office of Research and Analysis, U.S. Department of Agriculture. Alexandria, VA, 2010.
- ⁴ NCLR calculation using data from *WIC Participant and Program Characteristics* and the U.S. Bureau of the Census, “2008 Annual Social and Economic Supplement,” *Current Population Survey*. Conducted by the Bureau of the Census for the Bureau of Labor Statistics. Washington, DC, 2008, http://www.census.gov/hhes/www/cpstc/cps_table_creator.html (accessed September 2010).
- ⁵ *WIC Participant and Program Characteristics*.
- ⁶ Elizabeth Metallinos-Katsaras et al., “A Longitudinal Study of WIC Participation on Household Food Insecurity,” *Maternal and Child Health Journal* (May 2010), <http://www.springerlink.com/content/l12w4171117h5674/fulltext.pdf> (accessed September 2010).
- ⁷ Ibid.
- ⁸ Donald Rose, Jean-Pierre Habicht, and Barbara Devaney, “Household Participation in Food Stamp and WIC Programs Increases the Nutrient Intakes of Preschool Children,” *Journal of Nutrition* 128, no. 3 (1998): 548–555.
- ⁹ Ibid.
- ¹⁰ Karen Jeng et al., *Feeding Our Future: Growing Up Healthy with WIC* (Boston: Children’s HealthWatch, 2009).
- ¹¹ Children’s Sentinel Nutrition Assessment Program, *The Impact of Food Insecurity on the Development of Young Low-Income Black and Latino Children* (Washington, DC: Joint Center for Political and Economic Studies Health Policy Institute, 2006).
- ¹² Ibid.
- ¹³ Maureen M. Black et al., “Special Supplemental Nutrition Program for Women, Infants, and Children Participation and Infants’ Growth and Health: A Multisite Surveillance Study,” *Pediatrics* 114, no. 1 (2004): 169–176.
- ¹⁴ Ibid.

ISSUE 10: HISPANIC PARTICIPATION IN SCHOOL-BASED NUTRITION PROGRAMS

For school-age Latino¹ children living with household food insecurity, school-based child nutrition programs provide a consistent source of nourishment.² The National School Lunch Program (NSLP) and School Breakfast Program (SBP) provide nutrient-rich meals at reduced or no cost to millions of children each year (see Box 1). Although Hispanics represent more than one-fifth of children participating in the programs, a significant number of Latino children may be eligible for free or reduced-price school meals but are not enrolled due to program barriers experienced by their families.

Most Hispanic children participating in school-based nutrition programs are receiving meals at low or reduced cost.³

- According to the most recent estimates, in 1999–2004, Latinos represented about one-fifth (19.3%) of all students ages five through 18 and a slightly larger share (21.1%) of children participating in NSLP.⁴
- More than three-quarters of Hispanic children participating in the school lunch program receive meals for no or reduced cost. Nearly two-thirds (64.2%) of participating Latino children receive free lunch, and an additional 12.8% pay a reduced cost (see Figure 1).⁵ The remaining 23.1% of Latino children pay full price.⁶
- Hispanic children make up nearly one-third of all children receiving free (32%) or reduced-price (29.7%) lunches through NSLP.⁷

However, school-based nutrition programs are missing a number of Latino children from low-income homes who are likely to be living with food insecurity or hunger.

- Hispanics are likely to make up a large share of children who are eligible for free or low-cost school meals but are not receiving them. Researchers estimate that for 1999–2004, Mexican American children (28.4%) and children of other Hispanic origin (6.6%) made up more than one-third of income-eligible nonparticipants in NSLP.⁸
- Barriers, such as a lack of language access, transportation, and apprehension or confusion about application requirements, likely prevent many eligible children and families from accessing nutrition programs, including school-based nutrition programs.⁹

School-based meals increase children's energy and nutritional intake; they have not been associated with increased risk of overweight and obesity.

- In general, children participating in school meal programs are more likely than nonparticipants to consume more nutrients and have adequate daily intakes of certain important vitamins and minerals.¹⁰
- Compared to nonparticipants, children who took part in the breakfast program consumed more calories in the morning; as a result, researchers found that “participants’ energy intake appears to be spread out a bit more evenly over the course of the day than [that of] nonparticipants.”¹¹ Participation in SBP was also associated with a small decrease in body mass index (BMI) for age.¹²
- Another study found that among low-income children, those participating in NSLP were more likely than nonparticipants to consume nutrient-dense lunchtime meals.¹³ There were no significant differences in BMI-for-age between NSLP participants and nonparticipants at any income level.¹⁴

Federal school-based child nutrition programs are an important source of sustenance for millions of Hispanic children. To eliminate child hunger and improve access to nutritious foods for Latino children living in food insecurity, families must be able to enroll eligible children in these programs, which provide nutritious meals at low or no cost.

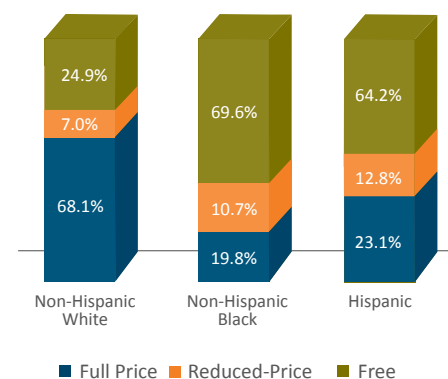
Box 1:

National School Lunch and School Breakfast Programs Defined

For children living with food insecurity and hunger, the meals served in school-based nutrition programs may be the primary source of regular and nutritious foods eaten throughout the day. The National School Lunch Program (NSLP) and School Breakfast Program (SBP) serve millions of children in grades K–12 in public and nonprofit private schools throughout the U.S. Both programs are administered by the Food and Nutrition Service of the U.S. Department of Agriculture (USDA). USDA reimburses schools for meals, which must meet certain nutritional standards, including minimum levels of several key nutrients—including protein, iron, vitamins A and C, and calcium—and with no more than 30% of calories from fat (10% from saturated fat). In 2009, about 31 million children participated in NSLP and ten million children participated in SBP.

Figure 1:

Distribution of Payment Types for Children Participating in NSLP by Race/Ethnicity, 1999–2004



Source: Constance Newman and Katherine Ralston, *Profiles of Participants in the National School Lunch Program* (Alexandria, VA: Economic Research Service, U.S. Department of Agriculture, 2006), <http://www.ers.usda.gov/publications/eib17/eib17.pdf> (accessed October 2010).

Endnotes

¹ The terms “Hispanic” and “Latino” are used interchangeably by the U.S. Census Bureau and throughout this document to refer to persons of Mexican, Puerto Rican, Cuban, Central and South American, Dominican, Spanish, and other Hispanic descent; they may be of any race. Furthermore, unless otherwise noted, estimates in this document do not include the 3.9 million residents of Puerto Rico.

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³ All children may participate in these programs, but certain children are automatically eligible to receive school breakfast and lunch at no cost. They include children receiving other federal program benefits, including the Supplemental Nutrition Assistance Program (SNAP, formerly known as the Food Stamp Program), and homeless or migrant children, who are categorically eligible for the program. Additionally, children living below 130% of the federal poverty level (FPL) are eligible to receive free meals, and children in homes with incomes between 130% and 185% of FPL are eligible to buy meals at a reduced cost.

⁴ USDA does not collect the race/ethnicity of NSLP and SBP participants. This study uses data from national surveys to estimate the demographics of children in the National School Lunch Program. In this profile, NCLR reports USDA’s estimates from the National Health and Nutrition Examination Survey. Constance Newman and Katherine Ralston, *Profiles of Participants in the National School Lunch Program* (Alexandria, VA: Economic Research Service, U.S. Department of Agriculture, 2006), <http://www.ers.usda.gov/publications/eib17/eib17.pdf> (accessed October 2010).

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.

⁸ Nancy Cole and Mary Kay Fox, *Diet Quality of American School-Age Children by School Lunch Participation Status: Data from the National Health and Nutrition Examination Survey, 1999-2004*. Office of Research, Nutrition, and Analysis, Food and Nutrition Service, U.S. Department of Agriculture. Alexandria, VA, 2008.

⁹ Crystal Weedall FitzSimons, James D. Weill, and Lynn Parker, *Barriers That Prevent Low-Income People From Gaining Access to Food and Nutrition Programs* (Washington, DC: Food and Research and Action Center, n.d.), <http://www.hungercenter.org/pdf/Barriers%20to%20Food%20and%20Nutrition%20Programs,%20FRAC.pdf> (accessed October 2010).

¹⁰ Anne Gordon and Mary Kay Fox, *School Nutrition Dietary Assessment Study III: Summary of Findings*. Office of Research, Nutrition, and Analysis, Food and Nutrition Service, U.S. Department of Agriculture. Alexandria, VA, 2007.

¹¹ Philip Gleason et al., *School Meal Program Participation and Its Association with Dietary Patterns and Childhood Obesity* (Washington, DC: Mathematica Policy Research, Inc., 2009).

¹² Ibid.

¹³ *Diet Quality of American School-Age Children by School Lunch Participation Status*.

¹⁴ Ibid.

ISSUE 11: LATINO PARTICIPATION IN THE SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM (SNAP)

When low-income Latino¹ families struggle with food security, one resource often available to them is the Supplemental Nutrition Assistance Program, or SNAP (formerly known as the Food Stamp Program) (see Box 1).² SNAP provides additional resources for families for food spending, with the goal of improving the quantity and quality of the food that they are able to buy. Participation in the program is linked to increases in food security and nutritional outcomes for children. However, there are barriers preventing millions of eligible Latinos—particularly children in mixed-immigration-status households—from accessing the program.

Millions of low-income Latino families and children are served by the SNAP program each year; however, nearly one-half of eligible Latinos do not receive SNAP assistance.³

- In 2008, more than four million Hispanics took part in SNAP, accounting for about one in seven (14.8%) of all SNAP participants. More than one million Latino households—about 9% of all participating households—had family members enrolled in the program.⁴
- While the share of eligible Latinos participating in SNAP has grown over time, Hispanic participation rates are lower than that of non-Hispanic Blacks and non-Hispanic Whites (see Figure 1).⁵ The most recent estimates show that in 2005, just over half (53.4%) of the 8.7 million eligible Latinos were receiving SNAP assistance.⁶
- In a survey of families using emergency food assistance through Feeding America, a nationwide network of food banks, pantries, and shelters, Hispanic families with children were less likely (41.7%) than Blacks (66.4%) and Whites (69.1%) to be participating in SNAP.⁷

Eligible citizen and noncitizen Latino children living with immigrant family members have an increased risk of nonparticipation in SNAP.

- Immigrant and mixed-immigration-status families (where U.S. citizens and noncitizens live together in the same household) may be deterred from applying on behalf of eligible children due to concerns or confusion about SNAP eligibility restrictions.⁸ This is particularly important for Latino families, as more than one-half (52%) of Latino children in the U.S. are citizens living with at least one noncitizen parent.⁹
- When researchers asked families accessing emergency food assistance why they had not contacted SNAP offices, nearly one-quarter (24.2%) of Hispanic families cited concerns about ineligibility due to citizenship status.¹⁰ The study suggests that confusion about complex restrictions or concerns about immigration consequences—rather than ineligibility—may be driving this pattern.
- While there is much work to be done to maximize the SNAP participation rates of eligible children in mixed-status families, the participation rate for U.S. citizen children with noncitizen parents has increased substantially—from 39.5% in 2000 to 61% in 2005.¹¹

For Latino families, SNAP is associated with children's increased food security, reduced hunger, and improved nutritional intake.

- The Urban Institute found that in low-income households, participation in SNAP reduced the likelihood of being food insecure by about 30% and decreased the odds of being very food insecure (hungry) by 20%.¹²
- A study of infants and toddlers living in low-income families participating in SNAP found that, compared to young Latino children in families who did not experience a reduction in or cessation of SNAP benefits, Latino babies and toddlers in families who stopped receiving SNAP were more than twice as likely to be food insecure.¹³ The researchers found no association between receipt of SNAP benefits and child overweight or obesity.¹⁴
- A multiethnic study of preschoolers ages one to four (21% of whom were Latino) found that SNAP participation increased children's intake of five key nutrients, including iron and zinc, and had no impact on intake of fat, saturated fat, or cholesterol.¹⁵

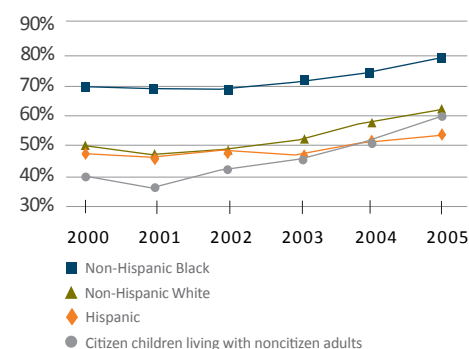
Millions of Latino children receiving SNAP benefits have a greater chance of living in food-secure homes and increased odds of consuming nutrients that are important for healthy growth. However, barriers prevent many Hispanic households from participating in the program. Eligible children living in immigrant families are among the most likely to fall through the cracks.

Box 1: SNAP Defined

SNAP combats food insecurity by providing low-income individuals and families with resources to purchase food in times of need. The program, administered by the Food and Nutrition Service of the U.S. Department of Agriculture (USDA), provides electronic benefits that can be used as cash for eligible food purchases at most grocery stores. An expanding number of food sellers, such as farmers' markets, also accept SNAP as payment.

Figure 1:

SNAP Participation Rates by Race/Ethnicity and Mixed-Immigration-Status Households, 2000–2005



Source: Kari Wolkwitz, *Detailed Tables of Food Stamp Program Participation Rates: 2000 to 2005*. Food and Nutrition Service, Office of Research and Analysis, U.S. Department of Agriculture. Alexandria, VA, 2008.

Endnotes

¹ The terms “Hispanic” and “Latino” are used interchangeably by the U.S. Census Bureau and throughout this document to refer to persons of Mexican, Puerto Rican, Cuban, Central and South American, Dominican, Spanish, and other Hispanic descent; they may be of any race. Furthermore, unless otherwise noted, estimates in this document do not include the 3.9 million residents of Puerto Rico.

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³ To be eligible for SNAP, participants must have a gross household income at or less than 130% of the federal poverty level (FPL) and have fewer than \$2,000 in resources (such as savings accounts or cars). The income guidelines are waived for the elderly and disabled, but these individuals must have less than \$3,000 in assets. While undocumented immigrants and certain legal immigrants are not eligible for SNAP, ineligible family members are able to apply for the program on behalf of their eligible family members. SNAP allotments are based on the Thrifty Food Plan, guidelines which are developed by USDA to help families purchase the least expensive market basket of foods that meet basic age- and gender-specific nutritional standards. Allotments for individuals and families take into account household size and, because they are designed to supplement family food spending, are calculated by reducing the maximum benefit by 30% of household income.

⁴ Kari Wolkwitz, *Detailed Tables of Food Stamp Program Participation Rates: 2000 to 2005*. Food and Nutrition Service, Office of Research and Analysis, U.S. Department of Agriculture. Alexandria, VA, 2008.

⁵ Ibid.

⁶ Ibid.

⁷ Sheila R. Zedlewski and Michael Martinez-Schiferl, *Low-Income Hispanic Children Need both Private and Public Food Assistance* (Washington, DC: Urban Institute, 2010).

⁸ While there are restrictions on immigrant participation in SNAP, including an exclusion of all unauthorized immigrants, ineligible parents can apply on behalf of eligible children, including both U.S.-citizen children and noncitizen children who are not subject to the same waiting periods as many legal immigrant adults.

⁹ Richard Fry and Jeffrey S. Passel, *Latino Children: A Majority Are U.S.-Born Offspring of Immigrants* (Washington, DC: Pew Hispanic Center, 2009).

¹⁰ *Low-Income Hispanic Children Need both Private and Public Food Assistance*.

¹¹ *Detailed Tables of Food Stamp Program Participation Rates*.

¹² Caroline Ratcliffe and Signe-Mary McKernan, *How Much Does SNAP Reduce Food Insecurity?* (Washington, DC: Urban Institute, 2009).

¹³ Children’s Sentinel Nutrition Assessment Program, *The Impact of Food Insecurity on the Development of Young Low-Income Black and Latino Children* (Washington, DC: Joint Center for Political and Economic Studies Health Policy Institute, 2006).

¹⁴ Ibid.

¹⁵ Donald Rose, Jean-Pierre Habicht, and Barbara Devaney, “Household Participation in Food Stamp and WIC Programs Increases the Nutrient Intakes of Preschool Children,” *Journal of Nutrition* 128, no. 3 (1998): 548–555.

ISSUE 12: NUTRITION ISSUES AND TRENDS AMONG CHILDREN OF IMMIGRANTS

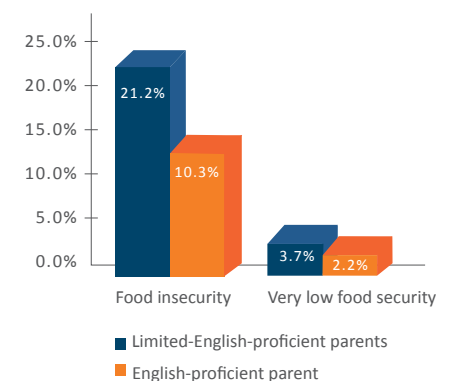
To fully understand issues affecting child nutrition in the Latino¹ community, it is important to examine the nutrition trends among children living in immigrant families.² While the vast majority (92%) of Latino children are citizens, many hail from immigrant families. In 2008, more than three-fifths (62%) of the nation's 16 million Latino children had at least one immigrant parent, and about 8.2 million—or 52% of the Latino child population—were citizen children living in families with mixed immigration status.³ Immigrant and mixed-status families are more likely than citizen families to have low levels of income, leaving them more likely to struggle with food insecurity and hunger.⁴ Adding to the complex social and economic factors that affect Latino families are legal restrictions and informal barriers that prevent immigrant and mixed-status families from accessing resources that can boost child nutrition outcomes.

Children living in migrant, immigrant, or mixed-status families are more likely than U.S.-born citizen families to be food insecure or hungry.

- One study estimated that 18.8% of infants of foreign-born parents were food insecure, compared to 11.3% of infants in U.S.-born citizen families.⁵ However, researchers have found that food security improves as parents obtain U.S. citizenship. Among children with foreign-born parents, infants living with at least one noncitizen parent were two times as likely as infants living with naturalized citizen parents to be food insecure and hungry.⁶
- Other factors, such as limited English proficiency (LEP), may decrease immigrant parents' ability to access nutrition resources for their children. Researchers found that children of LEP immigrant parents were twice as likely (21.2%) as children of English-proficient immigrant parents (10.3%) to live with food insecurity; furthermore, infants of LEP immigrant parents were more likely to live with hunger (see Figure 1).⁷
- Food insecurity is likely to be even higher among immigrant families whose income levels vary by month or season. One study of Latino migrant and seasonal farmworkers in North Carolina found that nearly two-thirds (63.8%) of families interviewed and nearly one-third (32%) of preschool-age children were food insecure.⁸ Of food-insecure families, about one-third (34.7%) experienced hunger.

Figure 1:

Infants of Immigrant Parent Living with Food Insecurity or Very Low Food Security (Hunger) by English Proficiency



Source: Randy Capps et al., *Young Children in Immigrant Families Face Higher Risk of Food Insecurity* (Washington, DC: Child Trends, 2009).

While Latino immigrant children are less likely to be overweight or obese than their U.S.-born peers, trends show that risk of childhood obesity increases with family acculturation.

- A longitudinal study of adolescents found that among Latino teens, first-generation immigrant children were significantly less likely (24.6%) than second-generation children (U.S.-born children of immigrant parents) (32.1%) and third-generation children (U.S.-born children of U.S.-born parents) (31.7%) to be overweight or obese.⁹
- Another study, which examined trends of obesity among immigrant and U.S.-born children stratified by race/ethnicity and generational status, found that second-generation Hispanic children in mixed-status families were 55% more likely than White children in native-born families to be overweight or obese.¹⁰

Many immigrant families are unable to access resources that help them provide their children with consistent, healthy meals.

- While children in immigrant families are often eligible for nutrition assistance, complex program requirements and fear of unintended immigration consequences often prevent families from accessing programs on behalf of their children. For example, Latino children in immigrant families are likely to be U.S. citizens living in poverty and therefore eligible for the Supplemental Nutrition Assistance Program (SNAP). However, the Urban Institute found that children in citizen families were about two times as likely (41%) as children of immigrants (20%) to have participated in SNAP during the previous year.¹¹
- One analysis estimates that among low-income families with children in 2005, 86% of mixed-status families had a member who was eligible for SNAP; however, just 39% of those eligible households were participating.¹² In comparison, about 60% of citizen families had an eligible family member, and 83% of those eligible participated in SNAP.¹³
- Other federal child nutrition programs with less restrictive eligibility may be more effective at reaching children in immigrant families. An analysis by the Urban Institute found that the number of children in immigrant families participating in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and the National School Lunch Program (NSLP) have increased between 1994 and 2006.¹⁴
- However, barriers to these programs persist. Researchers found that, among children eligible to obtain free meals through NSLP, children of immigrants—both citizens and noncitizens—were less likely to participate than citizen children living in native-born families.¹⁵

Targeting efforts to improve the nutrition outcomes for children living in immigrant families will be critical to making gains in preventing Latino child hunger, obesity, and food insecurity.

Endnotes

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² This profile was authored by Kara D. Ryan, Research Analyst with the Health Policy Project at the National Council of La Raza (NCLR), with guidance and substantive input from Jennifer Ng’andu, Deputy Director of the Health Policy Project. Kari Nye, Assistant Editor, and Tiptavee Thongtavee, Graphic Designer, provided technical support and prepared the document for publication. NCLR is the largest national Hispanic civil rights and advocacy organization in the United States.

³ Richard Fry and Jeffrey S. Passel, *Latino Children: A Majority Are U.S.-Born Offspring of Immigrants* (Washington, DC: Pew Hispanic Center, 2009).

⁴ In 2008, children with noncitizen parents were about two times as likely (32.7%) as children with citizen parents (14.9%) to live in poverty. Urban Institute, “Children of Immigrants Data Tool,” <http://datatool.urban.org/charts/datatool/pages.cfm> (accessed October 2010).

⁵ Randy Capps et al., *Young Children in Immigrant Families Face Higher Risk of Food Insecurity* (Washington, DC: Child Trends, 2009).

⁶ Ibid.

⁷ Ibid.

⁸ Kristen Borre, Luke Ertle, and Mariaelisa Graff, “Working to Eat: Vulnerability, Food Insecurity, and Obesity among Migrant and Seasonal Farmworker Families,” *American Journal of Industrial Medicine* 53 (2010): 443–462.

⁹ Barry M. Popkin and J. Richard Udry, “Adolescent Obesity Increases Significantly in Second and Third Generation U.S. Immigrants: The National Longitudinal Study of Adolescent Health,” *Journal of Nutrition* 128, no. 4 (1998): 701–706.

¹⁰ Gopal K. Singh, Michael D. Kogan, and Stella M. Yu, “Disparities in Obesity and Overweight Prevalence Among U.S. Immigrant Children and Adolescents by Generational Status,” *Journal of Community Health* 34, no. 4 (2009): 271–281.

¹¹ Randy Capps et al., *The Health and Well-Being of Young Children of Immigrants* (Washington, DC: Urban Institute, 2005).

¹² Everett J. Henderson, Randy Capps, and Kenneth Finegold, *Impact of 2002-03 Farm Bill Restorations on Food Stamp Use by Legal Immigrants* (Washington, DC: Urban Institute, 2008).

¹³ Ibid.

¹⁴ Tracy Veriker et al., *Effects of Immigration on WIC and NSLP Caseloads* (Washington, DC: Urban Institute, 2010).

¹⁵ Ibid.

Notes

