

# FOOD INSECURITY & HUNGER IN THE U.S. NEW RESEARCH

FOOD RESEARCH & ACTION CENTER

CHILDREN'S HEALTHWATCH



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**In This Issue:**

## **The Importance of Early Childhood Nutrition, WIC, and CACFP**

PDF Version

Welcome to the seventh issue of Food Insecurity and Hunger in the U.S.: New Research, a periodical created by the Food Research and Action Center (FRAC) and Children's HealthWatch.

IN FOCUS for this issue is "Early Childhood Nutrition Sets the Trajectory for Lifelong Health and Well-Being: WIC and the Child and Adult Care Food Program (CACFP) are Key Sources of Quality Early Nutrition." This article focuses on the critical importance of early child nutrition and the important role of both WIC and CACFP in improving early child nutrition and health. The second section of the issue – on NEW RESEARCH – highlights ten recent studies related to food insecurity, including new research addressing veterans, seniors, adults who are unemployed, pregnant and postpartum women, migrant and seasonal farmworkers, and SNAP participants.



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## IN FOCUS

### **Early Childhood Nutrition Sets the Trajectory for Lifelong Health and Well-Being: WIC and the Child and Adult Care Food Program (CACFP) are Key Sources of Quality Early Nutrition**

An explosion of research in recent decades has deepened the understanding of how crucial early life experiences are to the physical, cognitive, social, and emotional development that serve as building blocks for our children's achievement of successful lives commensurate with their ability, and our nation fulfilling its aspirations. Poor nutrition during the critical first five years of a child's life can negatively impact child development in both the short- and long-term and hinder adult achievement and productivity.

Early child development and nutrition programs, like the [Special Supplemental Nutrition Program for Women, Infants and Children \(WIC\)](#) and the [Child and Adult Care Food Program \(CACFP\)](#), are federal nutrition assistance programs that provide infants and children with access to nutritious food. WIC assists families in buying healthy supplemental foods from WIC-authorized vendors and offers nutrition education, growth monitoring, and access to health care. CACFP provides healthy meals and snacks to children in Head Start, family child care, child care centers, and afterschool programs. This brief first reviews the research on the importance of early childhood nutrition, and then demonstrates that WIC and CACFP are two of the most effective nutrition assistance programs available to families with young children.

### **Early Child Nutrition, Health, and Well-Being**

#### ***Child Nutrition Starts in the Womb***

Adequate prenatal nutrition is critical to ensure normal development of children's bodies and brains and to bolster child food security (Kind, 2006). Of particular concern during this period is the greater risk of food-insecure mothers entering pregnancy with insufficient iron stores and with low-folate diets. Poor iron and folic acid status are linked to preterm births and fetal growth retardation, respectively (Kind, 2006). Prematurity and intrauterine growth retardation are critical indicators of medical and developmental risks that affect not only children's short-term well-being but also extend into adulthood (Scholl & Johnson, 2000). Children born to

mothers who were food-insecure during pregnancy also are at increased risk of birth defects, including cleft palate, d-transposition of the great arteries, tetralogy of Fallot, spina bifida, and anencephaly (Charmichael et al., 2007). Finally, research shows that women who were marginally food insecure and had restricted their eating in an unhealthy way prior to becoming pregnant are more likely to gain excessive weight during pregnancy, which puts the mother at risk for gestational diabetes and obesity postpartum, and can predispose the baby to chronic disease through the phenomenon of prenatal nutritional programming (Laraia et al., 2013).

### ***The Importance of Early Childhood Nutrition***

The first few years of a child's life are marked by dramatic changes in cognitive, linguistic, social, and emotional development and in self-regulation, setting the stage for school readiness and adult well-being (Shonkoff & Phillips, 2000). Adequate nutrients are required to support this normal rapid growth and development, but food insecurity can compromise this. The U.S. Department of Agriculture (USDA) estimates that 20.9 percent of all U.S. households with children under 6 years of age experienced food insecurity in 2013, reporting limited or uncertain availability of enough food for an active, healthy life (Coleman-Jensen et al., 2014). Research has shown that there is a statistically robust association between household food insecurity and physical health and developmental risk during early childhood, when brain growth is rapid (Rose-Jacobs et al., 2008).

More specifically, compared to food-secure children, food-insecure children have odds of "fair or poor" health nearly twice as great, and odds of being hospitalized since birth almost a third larger (Cook et al., 2004). Mental health problems such as depression and anxiety disorders in mothers and behavior problems in preschool age children are more common when mothers are food insecure (Cunningham et al., 2012; Whitaker et al., 2006). Even mild nutritional deficits during critical periods of brain growth among infants and toddlers, also known as marginal food security, may be detrimental, as they are associated with higher odds of child fair or poor health status, hospitalizations, and mothers' depressive symptoms and fair or poor health status, compared with children and mothers in food-secure households (Cook et al., 2013). This is especially concerning since the adverse effects of food insecurity on health and development in young children occur before the appearance of readily identifiable clinical markers, such as underweight (Cook & Frank, 2008).

Beyond the immediate health and development risks of food insecurity among young children, food insecurity has been identified as a serious risk factor for long-term poor health among children; repeated or persistent exposure to food insecurity appears to be particularly toxic (Ryu & Bartfeld, 2012). For example, food insecurity's impacts on health differ according to age and gender, with younger children experiencing general health impacts, older youth experiencing chronic conditions and asthma, and adverse effects persisting for girls but not boys (Kirkpatrick et al., 2010). Furthermore, a comprehensive longitudinal study has shown food insecurity is linked to developmental consequences for both girls and boys during kindergarten through third grade, and impaired social skills development and reading performance for girls (Jyoti et al., 2005).

## **WIC**

The Special Supplemental Nutrition Program for Woman, Infants, and Children (WIC) is a federally funded program for pregnant, postpartum, and breastfeeding women as well as infants and young children up to age five. WIC, which currently serves approximately 7.9 million women, infants and children each month, was developed to ensure that women and children receive the supplemental foods and counseling needed for good health.

WIC benefits children's health and well-being starting prenatally and follows them forward, beyond their participation in the program. However, the ways in which WIC benefits participants differs by age, as outlined below in a brief review of the large body of research demonstrating WIC's importance in supporting infant and child health and development. (In 2009, WIC updated its food packages to include more whole grains, low-fat milk, fruits, and vegetables, in addition to putting more emphasis on breastfeeding education and support. Some of these studies were conducted prior to implementation of the new food package and some subsequent to its introduction.)

### ***WIC's Importance during Pregnancy and the Postpartum Period***

WIC participation during pregnancy has important benefits for both mothers and their babies deriving from the improved nutrition provided in the food packages in addition to the nutrition counseling and linkages to health care. Several foundational studies established WIC's role in healthy birth outcomes and subsequent cost savings. For instance, women who participated in WIC prenatally had better birth outcomes (fewer preterm and low birthweight births), significantly lower health care costs, and

longer pregnancies, and received more prenatal care (Buescher et al., 1993; Devaney et al., 1980; Avruch & Cackley, 1995). Other research found that the postpartum benefits of participation more than offset the cost of the program (Avruch & Cackley, 1995).

More recent research demonstrates that the timing of WIC participation makes a difference in maternal health and well-being, which is critical for child health and well-being, as already discussed. Early prenatal entrance to WIC – in the first versus the third trimester – increased the likelihood of breastfeeding initiation and increased its duration (Metallinos-Katsaras et al., 2015). In addition, food-insecure women who enrolled in WIC in the first or second versus the third trimester were significantly less likely to be food insecure postpartum (Metallinos-Katsaras et al., 2011). Importantly, women who participated in WIC after pregnancy had higher hemoglobin levels and lower risk of maternal obesity at the beginning of their subsequent pregnancy (Caan et al., 1987), helping to ensure that women have the good preconceptional health, nutrition, and weight status essential for healthy pregnancies and birth outcomes and, later on, contributing to children having a healthy weight for their age (Barroso et al., 2012). Additionally, mothers who participated in WIC during pregnancy were more likely to stay connected to WIC as their children got older, and mothers whose children continued participating in WIC had higher rates of good or excellent maternal health (Winters et al., 2015).

### ***WIC Supports Infant Growth and Health***

Research shows that prenatal WIC receipt helps mothers give birth to healthy, full-term babies, reduces infant mortality, and promotes breastfeeding initiation, when compared to mothers not receiving prenatal WIC services (Gordon & Nelson, 1995; Khanani et al., 2010; Metallinos-Katsaras et al., 2015). Breastfeeding is itself linked to a host of beneficial health outcomes for infants and children (American Academy of Pediatrics, 2012). WIC's updated nutritional design invigorated support for breastfeeding mothers; researchers found that the change to food packages that occurred in 2009 improved breastfeeding initiation as well as improved infant feeding practices by increasing the rates of parents delaying the introduction of solid foods until after four months of age (Chiasson et al., 2013). Poor infant feeding practices and food insecurity have been linked to later child obesity (Bronte-Tinkew et al., 2007).

In addition, WIC participation during the first year of life is associated with having a healthy weight and length for age and being in good or excellent health, as compared to similar infants who did not receive WIC due to

access problems (Black et al., 2004). Infants and toddlers participating in WIC also are more likely to be on schedule with their immunizations and have a regular source of medical care (Shefer et al., 2002). With these and other benefits to health, WIC contributes to significant cost savings across the health care system. According to one estimate, every dollar spent on WIC saves \$1.77 to \$3.13 in Medicaid costs for newborns and mothers within the first 60 days after birth (Devaney et al., 1992).

### ***WIC Helps Toddlers to Thrive***

In the toddler years (approximately ages one to three years), WIC reduces child food insecurity, improves overall health, helps to maintain a healthy weight for age, and helps children's cognitive development (Kreider et al., 2012; Black et al., 2012). More specifically, two-year-olds who participated in WIC in early life had better cognitive development scores than similar children who did not participate in WIC (Jackson, 2015). And even in the face of family stressors such as household food insecurity and maternal depressive symptoms, children who received WIC, compared to those who did not, were more likely to be in good health, less likely to be hospitalized, and less likely to be at risk for developmental delays (Black et al., 2012).

Young children's diets also benefit from WIC. Even prior to the package change, research on WIC demonstrated that children participating in WIC had higher mean intakes of essential nutrients (e.g., iron, vitamins C and B6) (Rose et al., 1998), were less likely to have anemia (Schneider et al., 2008), and were less likely to have iron deficiency anemia (Schneider, 2005). After the food package revisions, young children participating in WIC ate more fruits, vegetables and whole grains on a daily basis, and parents were more likely to have switched from whole milk to lowfat milk (Chiasson et al., 2013; Whaley et al., 2012). There also were small but measurable changes in the prevalence of overweight among young children after the food package revisions (Chiasson et al., 2013).

As with infants, WIC helps young children to stay connected to the health care system. Children enrolled in Medicaid who also participated in WIC were more likely to receive both preventive and curative care compared to their peers enrolled in Medicaid but not WIC. The children participating in WIC had more well-child visits as well as more of the recommended Medicaid well-child, diagnostic and treatment package - Early and Periodic Screening, Diagnostic and Treatment - visits. They also had more acute care visits, with diagnosis and treatment of common childhood illnesses (Buescher et al., 2003).

## ***WIC Helps Preschool-Age Children to Later Succeed in School and Maintain Good Health***

As children get closer to Kindergarten, it can become challenging to keep children connected to WIC. Yet there are strong reasons for ensuring children participate as long as possible. Children who continued participating in WIC were more frequently considered “well children” (i.e., in excellent or good health, no developmental delays, no hospitalizations, healthy weight for their age) and were less frequently overweight than children who formerly received WIC (Winters et al., 2015). WIC also helped parents to stay informed and connected to children’s health needs, in particular teaching parents about children’s oral health and helping them to access dental care (Lewis et al., 2010).

However, even for those who may or may not have continued to participate in WIC up to age five, the benefits of having received WIC early on extend beyond eligibility for the program into the school years (Heflin et al., 2012). For instance, a recent study found that children who received WIC prenatally and/or in early life had significantly better reading and letter-word identification scores as well as better math scores even years later in elementary school (Jackson, 2015).

## **CACFP**

The Child and Adult Care Food Program (CACFP) provides cash reimbursement to Head Start programs, family day care, child care centers, homeless shelters, and afterschool programs for meals and snacks served to children. While adults are eligible (i.e., adult day care settings for adults with disabilities), the bulk of funding through this program is directed towards younger children. Approximately two-thirds of the 2 billion meals per year served through the program go to public or private nonprofit child care centers and Head Start programs. While much of the research on CACFP focuses on program implementation, there are several studies that evaluate the impact of participation on household and child food security or child health. The available (albeit limited) research, highlighted below, provides evidence that CACFP is effective in reducing food insecurity and supporting good health and development among young children (Gordon et al., 2010; Korenman et al., 2013; Heflin et al., 2015).

## ***CACFP Promotes Infant and Toddler Nutrition***

CACFP's greatest strengths are the benefits it provides for children's health and dietary intake. Children who were receiving CACFP meals were 28 percent less likely to be in fair or poor health, 26 percent less likely to be hospitalized, and also significantly more likely to have a healthy weight and height for their age than children whose meals were supplied from home (Gayman et al., 2010). One recent study among low-income children found that CACFP participation moderately increased consumption of milk and vegetables, and reduced the prevalence of overweight and underweight among low-income preschoolers (Korenman et al., 2013). Similarly, preschool children with an unhealthy weight status (i.e., obese, overweight, or underweight) who participated in Head Start had healthier BMIs by kindergarten than non-participants – children were less obese, less overweight, and less underweight (Lumeng et al., 2015).

Research also demonstrates that CACFP has favorable impacts on the quality of food served to young children. For example, an assessment of licensed child care centers in Los Angeles County found that locally-sponsored child care centers participating in CACFP and Head Start centers had the best meal quality, compared to the meal quality of food brought from home (Whaley et al., 2008). Another California-based study found CACFP sites in general, and Head start centers in particular, served more fruits, vegetables, milk, and meat/meat alternatives, and fewer sweetened beverages and other sweets and snack-type items than non-CACFP sites (Ritchie et al., 2012).

## **Conclusion**

In brief, the prenatal, prenatal, and early childhood periods set the foundation for mental, physical, social, and emotional health. WIC and CACFP are key nutrition supports targeted to these periods. WIC has an extensive evidence base demonstrating its importance in reducing food insecurity and supporting all facets of child health and development and diet quality. CACFP has a smaller but growing evidence base demonstrating its importance for young children's diet quality, weight status, and overall health. More research is needed to explore these connections more thoroughly and to continue to strengthen the programs. Additionally, understanding the importance and impact of these programs is especially relevant right now as the Child Nutrition and WIC Reauthorization Act, which authorizes all of the federal child nutrition programs (including WIC and CACFP), is set to expire on September 30, 2015. Congress has an opportunity to strengthen our nation's child nutrition assistance programs and provide millions of infants and children with access to nutritious food, setting a trajectory for lifelong health and

well-being.

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## NEW RESEARCH

### ***Special Populations***

#### **Food insecurity and health: Data from the Veterans Aging Cohort Study**

Food insecurity rates are high and associated with worse self-management of medical conditions among veterans who accessed care in the Veterans Health Administration (VA) health-care system, according to a new study published in *Public Health Reports*. Using clinical and

administrative data from a multisite sample of veterans enrolled in the Veterans Aging Cohort Study (VACS) from 2002–2008, the study authors defined the prevalence of food insecurity among veterans who have accessed health care in the VA by “concern about having enough food for you or your family in the past month.” The study authors determined factors independently associated with food insecurity for these veterans (such as race, income, material hardship, drug use, mental health), and measured the association between food insecurity and control of hypertension, diabetes, HIV, and depression.

Of the 6,709 veterans enrolled in VACS, 24 percent reported being food insecure. Food insecurity was independently associated with being African American, earning less than \$25,000 per year, experiencing recent homelessness, and having a history of depression. Being food insecure also was significantly associated with worse self-management of hypertension, diabetes, HIV, and depression. Longitudinal studies with detailed measures of food insecurity are needed to better understand the relationships between food insecurity and health outcomes, and to inform specific interventions to reduce health inequities among veterans.

Wang EA, McGinnis KA, Goulet J, Bryant K, Gibert C, Leaf DA, Mattocks K, Fiellin LE, Vogenthaler N, Justice AC, Fiellin DA, Veterans Aging Cohort Study Project Team. [Food insecurity and health: Data from the Veterans Aging Cohort Study](#). *Public Health Reports*. 2015; 130(3): 261-268.

### **Food insecurity among older adults**

Food insecurity among older adults (i.e., those 40 years or older) in 2012 remained well above pre-recession levels, based on a report by AARP Foundation. Using data from the Current Population Survey and the National Health and Nutrition Examination Survey, researchers found that the prevalence of food insecurity among older adults was 18.3 percent in 2012, considerably higher than the rate of 13.8 percent in 2007 before the Great Recession. Those 40 and 49 years of age had the highest rates of food insecurity, compared to those aged 50 to 59, 60 to 69, and 70 or older, which the authors believe is driven, in part, by low awareness of available assistance. Furthermore, those aged 70 years or older had the lowest rates of food insecurity compared to the other age groups. Previous research indicates that food insecurity decreases as seniors age and become eligible for social programs, especially Social Security. Finally, African-Americans, families living in poverty, those living in the South, people who were unemployed, disabled or less educated, and those who rent their homes were more likely to be food insecure. The authors suggest that the unique concerns and distinct needs of older populations –

which may vary with age – should be considered when targeting interventions to prevent and alleviate food insecurity.

Strickhouser S, Wright JD, Donley AM. [Food Insecurity among Older Adults](#). AARP Foundation. 2015.

### **Securing the essentials: Findings on nutrition knowledge and food insecurity among older adults**

The AARP Foundations finds that many older Americans are making tough choices related to food and nutrition. The study used a nationally representative survey in 2014 of 1,000 adults aged 50 years or older who lived in a household with income under 200 percent of the federal poverty level. Thirty-five percent of these older adults reported buying less nutritious food because there was not enough money for food, and 33 percent cut or skipped meals because of a lack of money. About 13 percent were enrolled in SNAP, which is low considering many are likely eligible given their income. The report also found that two-thirds of older adults purchased nutritious foods “all or most of the time,” and food costs and location were the most important factors when deciding where to shop. Overall, the report focuses on the need to address food insecurity among low-income older adults in the U.S., including connecting this vulnerable population to SNAP.

AARP Foundation. [Securing the Essentials: Findings on Nutrition Knowledge and Food Insecurity among Older Adults](#). AARP Foundation. 2015.

### **Migrant and seasonal farmworker food insecurity: Prevalence, impact, risk factors, and coping strategies**

Migrant and seasonal farmworkers tend to be young and have very high rates of food insecurity, especially among those who have children, according to a review in *Social Work in Public Health*. On average, migrant and seasonal farmworkers are 33 years old. Many have terminated their education by middle school, in part because the legal minimum age for farm work is 12 years compared to 16 years for other sectors of the workforce. The ten studies in the review article found varied rates of household food insecurity among both groups (migrant and seasonal) of workers even though all ten studies used the same USDA 18-question scale. In most studies, food insecurity rates were high and ranged from 50 to 65 percent; however, one study in the Southwest reported a much higher rate of 82 percent and one study in the Northeast found a much lower rate of 8 percent. Seasonal farmworkers tend to be relatively stationary while those who are migrant workers tend to move frequently,

and have higher rates of food insecurity than their seasonal counterparts (55 percent versus 43 percent, respectively). Both rates are still dramatically higher than the national average.

Household level risk factors for food insecurity in this population included: lack of access to stoves and refrigerators for food preparation and storage; presence of children; and transportation challenges (reliability as well as distance to work, grocery stores, and assistance, such as food pantries). Individual risks included low maternal education and lack of documentation of legal status. (The latter makes workers vulnerable to abusive worksite practices. Workers on H-2A visas, for example, have certain rights, including the availability of food and food preparation facilities at the worksite.) Strategies to cope with food insecurity included adult reduction of food quantity or quality in order to feed children, seeking help from assistance programs (e.g., WIC, school meals, food pantries and SNAP), and eating wild foods hunted or gathered by the family or workers' group. To improve food security for this population, the authors suggest that social workers advocate for immigration reform, increases in migrant and seasonal worker wages, inclusion in federal assistance programs, and improved access to healthy foods through alternative emergency food models, such as mobile distribution points.

Kiehne E, Mendoza NS. [Migrant and seasonal farmworker food insecurity: Prevalence, impact, risk factors, and coping strategies](#). *Social Work in Public Health*. 2015; 30(5): 397-409.

### ***Supplemental Nutrition Assistance Program***

#### **Association of participation in the Supplemental Nutrition Assistance Program and psychological distress**

Participation in the Supplemental Nutrition Assistance Program (SNAP) is associated with decreased psychological distress, according to a study published in the *American Journal of Public Health*. The authors used a unique research design that compared households that had been certified for SNAP in the five days prior to sample selection to those same households after they participated in SNAP for about six months. Psychological distress, the main outcome of interest, was measured and scored using a six-question survey that asked respondents how often over the past 30 days they felt nervous, hopeless, restless, worthless, so depressed that nothing could cheer them up, or that everything was an effort. A smaller proportion of household heads reported psychological distress after participating in SNAP for six months (23.2 percent at baseline vs. 15.3 percent at follow up). In statistical models that adjusted

for social and demographic factors, participation in SNAP for six months was associated with a 38 percent reduction in psychological distress. The authors conclude that participation in SNAP might reduce the burden of psychological distress and should be considered as a public health tool to improve the health and well-being of low-income populations.

Oddo VM, Mabli J. [Association of participation in the Supplemental Nutrition Assistance Program and psychological distress](#). *American Journal of Public Health*. 2015; 105(6): e30-e35.

### ***Food Insecurity Determinants and Coping Strategies***

#### **Unemployment and household food hardship in the economic recession**

According to a new study published in *Public Health Nutrition*, the probability of household food insecurity increased as unemployment increased among working-age household heads during the 2007–2009 economic recession. Using the Census Bureau's nationally representative longitudinal Survey of Income and Program Participation (SIPP; 2008–2011), the study authors created two analytic samples from multiple waves of SIPP interview responses (14,417 and 13,080 responses, respectively) to examine the relationship between unemployment and food insecurity during the Great Recession. The authors measured food insecurity using five questions from the U.S. Department of Agriculture's eighteen-item Food Security Scale, and measured unemployment by asking about the number of job losses and the total duration of job loss.

Unemployment was positively associated with food insecurity (as unemployment increased so did the odds of food insecurity), even when considering whether the household was food insecure before becoming unemployed. For households with the same duration of unemployment, each additional episode of unemployment increased the odds of food insecurity by 8 percentage points. Suggested policy implications included connecting unemployment assistance more closely to public food and nutrition assistance, such as SNAP, to potentially lower the prevalence of food insecurity among unemployed households. Specifically, applications and eligibility for food assistance and unemployment benefits could be connected to encourage households who apply for unemployment assistance to be screened for food assistance program eligibility.

Huang J, Kim Y, Birkenmaier J. [Unemployment and household food hardship in the economic recession](#). *Public Health Nutrition*. 2015; Epub ahead of print.

## **Resilience and hope: Identifying trajectories and contexts of household food insecurity**

All families experience crises, but the ability to adjust to a crisis and avoid food insecurity depends on other existing challenges, strengths, and contexts, according to a study published in the *Journal of Hunger and Environmental Nutrition*. Fourteen adults with children in South Carolina participated in semi-structured interviews covering the participants' description of their lives, including high and low points, and times when they struggled with food shortages or needed to use low-cost food in order to feed their families. Participants also were asked what should be done to end child hunger at the community, state, and national levels.

The authors analyzed participant responses and grouped them according to themes of life demands, capabilities, and "meanings". Life demands were experiences that created stress or made it challenging to respond to major life events (e.g., death of a loved one, job loss). Common life demands among participants included family issues, the difficult experience of applying for/receiving assistance program benefits, employment challenges (e.g., low wages, long distance from work), as well as health and medical needs. Capabilities were experiences or situations that enabled families to respond to crises and/or manage food insecurity, including family support, employment, assistance program benefits, and training and/or skills.

Meanings were the ways in which participants understood their identity and the context of their lives, such as their appraisal of their own/family stress, religious perspectives on life in relation to the crises they confronted, and the meaning of food in family life. More specifically, this included positive memories like shared meals on special occasions and the role of cooking as both a rite of passage and a useful skill. Meanings also included reflections on more difficult situations from childhood, such as finding things to sell in order to obtain money for food.

Among participants' ideas for addressing child hunger, community-level suggestions included creating safe havens for children at community centers that also would offer meals, reliable transportation, and community-based job training to help with maintaining employment. State level suggestions included funding for food banks and making more healthy foods available. At the national level, participants talked about the importance of maintaining strong funding for Medicaid and creating a national plan to address child hunger.

Younginer NA, Blake CE, Draper CL, Jones SJ. [Resilience and hope: Identifying trajectories and contexts of household food insecurity](#). *Journal of Hunger and Environmental Nutrition*. 2015; 10(2): 230-258.

### ***Food Insecurity Before, During, and After Pregnancy***

#### **Food insecurity during pregnancy leads to stress, disordered eating, and greater postpartum weight among overweight women**

According to a recent article in the journal *Obesity*, food insecurity during pregnancy and postpartum food insecurity are associated with higher stress levels and unfavorable dietary fat intake in the postpartum period. Using data from 526 women in North Carolina followed from pregnancy until one year after giving birth, researchers examined the impact of food insecurity during pregnancy on outcomes at three and twelve months postpartum, as well as the impact of food insecurity during the postpartum period on outcomes at twelve months postpartum. Comparisons were made to food-secure women after accounting for demographic, socioeconomic, and health characteristics.

Food insecurity and marginal food security during pregnancy were each associated with higher stress levels at three and twelve months postpartum. Similarly, food insecurity and marginal food security during the postpartum period were associated with higher stress levels at twelve months postpartum. Marginal food security during both time periods was consistently associated with disordered eating behaviors at three and twelve months postpartum. Food insecurity during both time periods was consistently associated with a higher intake of calories from fat at three and twelve months postpartum. In addition, food security status and weight status were linked in a number of analyses. For example, among women who were overweight/obese before pregnancy, food insecurity during pregnancy was associated with greater weight and body mass index (BMI) at twelve months postpartum. The authors conclude that “these findings support the hypothesis that household food insecurity is a multifactorial insult on women’s health.”

Laraia B, Vinikoor-Imler LC, Siega-Riz AM. [Food insecurity during pregnancy leads to stress, disordered eating, and greater postpartum weight among overweight women](#). *Obesity*. 2015; 23(6): 1303-1311.

#### **Associations of maternal material hardships during childhood and adulthood with prepregnancy weight, gestational weight gain, and postpartum weight retention**

A new study in the *Journal of Women’s Health* concludes that material

hardship during childhood or adulthood may influence a mother's weight before, during, or after pregnancy, but more research is needed given methodological limitations. This Boston-based study of 2,128 women examined the relationship between childhood and maternal material hardship and weight before, during, and after pregnancy. Material hardship was defined as having ever received public assistance, received welfare, or lacked basic necessities (e.g., food, rent, medical care). Nine percent of women reported experiencing material hardship during childhood, compared to five percent experiencing material hardship in adulthood before pregnancy and two percent in adulthood during pregnancy. Possibly because of the small number of women in the sample who experienced material hardship, only one significant association was found between material hardship and weight outcomes after accounting for demographic and/or socioeconomic characteristics. (A number of associations were observed before these factors were taken into consideration.) Material hardship in adulthood was associated with prepregnancy obesity after accounting for maternal age, race/ethnicity, and number of prior births; however, the association became nonsignificant after also accounting for education, marital status, and household income. The authors argue that their findings are suggestive of an effect of material hardship on the weight outcomes under investigation, and the study should be replicated with a larger number of women experiencing material hardship.

Provenzano AM, Rifas-Shiman SL, Herring SJ, Rich-Edwards JW, Oken E. [Associations of maternal material hardships during childhood and adulthood with prepregnancy weight, gestational weight gain, and postpartum weight retention](#). *Journal of Women's Health*. 2015; 24(7): 563-571.

### ***Poverty and the Life Course***

#### **The likelihood of experiencing relative poverty over the life course**

Nearly two-thirds of Americans will experience at least one year of relative poverty between the ages of 25 and 60, according to a new analysis published in *PLOS ONE*. Using nationally representative data from the 1968 through 2011 Panel Study of Income Dynamics, researchers analyzed the likelihood of individuals falling below the 20th and 10th percentiles of the income distribution between 25 and 60 years of age. These cut-offs represent relative measures of poverty and extreme poverty, respectively. Between the ages of 25 and 60, approximately 62 percent of the population will experience at least one year below the 20th percentile, and approximately 42 percent will experience at least one year

below the 10th percentile. Those who are female, non-White, younger, not married, less educated, or who have a disability that interferes with their ability to work are more likely to experience a year of poverty or extreme poverty between 25 and 60 years of age. In addition, only 15.3 percent and 5.6 percent of American adults will experience 5 or more and 10 or more consecutive years of poverty by age 60, respectively, which suggests that poverty often occurs over short periods of time. The authors conclude that "relative poverty is an economic condition that will strike the majority of Americans."

Rank MR, Hirschl TA. [The likelihood of experiencing relative poverty over the life course](#). *PLOS ONE*. 2015; 10(7): e0133513.

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