

PARTNERSHIP  
FOR AMERICA'S  
ECONOMIC  
SUCCESS

# Reading, Writing and Hungry

The consequences of food insecurity on children,  
and on our nation's economic success



*Hungry children represent not only a moral crisis but also a dire educational and economic risk for the nation.*

*Children who go hungry in kindergarten are noticeably behind their peers in reading and math by third grade. Hungry children suffer from hyperactivity, absenteeism, and generally do worse both socially and academically in school. They are more likely to need special assistance or repeat a grade. And some of them may never catch up.*

When parents cannot afford healthy meals for their babies and toddlers, the consequences are potentially devastating. Failing to systematically and comprehensively address the issue of food insecurity among children—an issue that currently plagues over 12 million U.S. households<sup>1</sup>—hurts their ability to succeed in school and in life. It also hinders the nation's ability to develop the productive workforce that we need.

Early childhood health experts from the Children's Sentinel Nutrition Assessment Program and the Food Research and Action Center find, in a paper for the Partnership for America's Economic Success, that food insecurity among young children carries significant economic costs for individuals and families, and therefore economic problems for society as a whole.

It does not have to be this way. Instead of letting our economic downturn make a desperate situation worse, we should address this problem now by promoting programs and initiatives that invest in children and build our economy. By acting now, we can provide every child in America with the basic necessities to begin life well, and every American taxpayer with the hope of a brighter socioeconomic future for our country.

**Food insecurity is a lifecycle issue that creates a "domino effect" of negative consequences**



Low birth weight and birth defects



Obesity



Mental health issues



Dental health problems



Poor education outcomes



Longterm economic costs

4.48	20.74	+1.06	30.77	57.77			
37.52	Awokodi	.80f	13	71.99	-23	72.97	37
35.00	AREnot	.60f	7	86.04	-1.16	131.00	35
37.72	AmSitter	.72	19	59.00	+42	59.47	37
27.35	AmLower	cc	41	34	+0.6	141.54	27
29.53	APlasticK		36	25	+75	46.10	29
20.54	AmeriCap		25	24	+0.6	25.65	20
23.27	AmeriDing		17	81	+58	38.06	23
43.49	AmeriDing		17	81	+58	38.06	23
43.15	AmeriDing		17	81	+58	38.06	23



7	86
19	59
cc	47
36	36
25	25
37	37
37	37
37	37
37	37
37	37

## Food insecurity is an increasingly serious issue, especially for children

Food prices in the United States are rising rapidly. In 2006, they increased by just 1.7 percent, but then grew by 4.2 percent in 2007 and may increase by double that, to more than 9 percent a year through the beginning of 2012, the largest increase since 1979.<sup>2,3</sup> As a result, food costs now affect families in a wide range of demographic groups, with even the middle class feeling the squeeze. These stresses are particularly dangerous for young children, because food insecurity can have a domino effect, producing a cascade of poor outcomes.

## Birth Outcomes

What mothers consume during pregnancy significantly impacts both their own and their newborn infants' well-being. Pregnant women who do not eat enough nutritious foods increase their babies' risk of being born with low birthweight and dying in infancy, as well as adversely affecting long-term infant health, growth, and development trajectories.<sup>4</sup>

Food insecurity during pregnancy also significantly affects physical systems in the developing fetus and can lead to the baby being born with cognitive and physical impairments. One rigorously controlled 2007 study finds that food insecurity during pregnancy increases the risk of certain birth defects, including cleft palate, spina bifida, and brain defects.<sup>5</sup>

### What it means to be food insecure

#### Low food insecurity

Household food insecure without hunger



Household members are concerned about the foods they can afford, so they adjust household food management, including purchasing less expensive (usually lower-nutrient) foods. Children are largely unaffected.

#### Medium food insecurity

Household food insecure with adult hunger



Adults in the household often reduce the quantity of their food intake, causing them to repeatedly experience hunger. Children are not generally hungry because adults shield them from the effects of food insecurity, but their diets tend to be extremely poor in nutrients.

#### Severe food insecurity

Household food insecure with child hunger

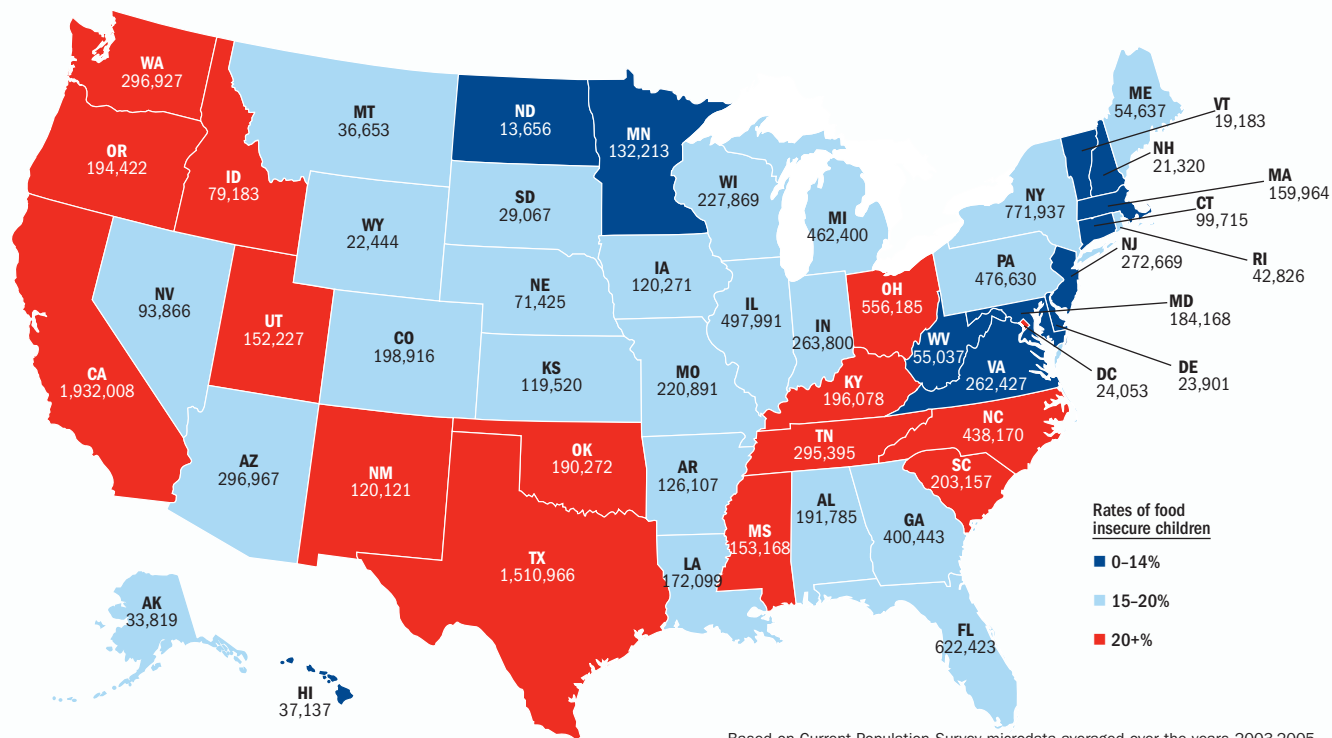


In addition to the hunger that caretakers experience, they are forced to reduce household children's food intake to such an extent that the children experience hunger. Lack of nutrition is severe.



## Average Number and Percentage of Food Insecure Children Aged 0-17

Too many children in America experience food insecurity.



Based on Current Population Survey microdata averaged over the years 2003-2005.

## Early Childhood Health Outcomes

Food insecurity impairs proper physical growth and development in young children and creates pathways for poor health. Growing up without proper nourishment puts children at an early disadvantage, and they often lag behind their peers on multiple fronts. Poor health limits children's ability to grow and learn, thus reducing adult earnings and increasing adult health costs.

### Obesity

In industrialized Western nations, the least expensive foods tend to be processed and high in sodium, sugar, and calories, but low in nutrients. This causes excess consumption of calories and significantly increases the likelihood of a child being overweight or obese. Food insecure children are more likely to be obese, especially if they are not eligible for food assistance programs, because their families may cope with tight budgets by

buying these cheaper, less healthy foods. In addition, buying healthy foods in low income neighborhoods may be difficult.<sup>6</sup> Obesity is not only a health concern, but an economic one; in 2003, obesity-related disease management among 6-to-17 year olds cost the United States \$127 million, and the cost continues to rise.<sup>7</sup>

### Food insecurity contributes to obesity

- Low birthweight babies whose families were food insecure in early childhood are almost 28 times more likely than their peers to be overweight or obese at age 4 ½.
- Children whose families experienced food insecurity while the child was a toddler are 3.4 times more likely to be obese at age 4 ½.
- Preschool children who are overweight have been found to be five times more likely than their peers with normal weights to be overweight at age 12.
- Almost 14% of all preschool children in the U.S. are overweight.

4.48	5	20.74	+0.86	38.7	72.97	57	
107.52	AwcoKdI	.801	13	71.99	-23	131.00	35
105.00	AREnot	.601	7	86.04	-1.16	59.47	37
104.72	AmSitter	.72	19	59.00	+42	441.54	27
104.35	AmLower	cc	41.34	+0.6	46.10	29	
104.53	APlasticK		36.25	+75	25.65	26	
104.54	AmeriCap		25.24	-0.6	38.96	28	
104.27	AmeriDing		17.81	-58	63.09		
104.49	AmeriCap		1.18	74	46.56	30	
104.15	AmeriCap		1.83	0.6	46.56	30	



7	86.6
19	59.0
cc	47.1
15	36.8
25	25.2
73	7.7

**If you need to feed a hungry child on a tight budget, what would you choose?**



**Soda**  
**\$.99**  
**917 calories**



**Milk (2%)**  
**\$2.99**  
**976 calories**

Calories are important to feel satiated; however those calories need to come from foods with vitamins and minerals, rather than sugar and preservatives. Food insecure families have a difficult time affording nutritious food items for their children, and many are forced to choose quantity over quality. Consuming unhealthy food at a young age can have particularly adverse effects, setting dangerous pathways for health outcomes, educational achievement, and socio-emotional development.

**Mental health**

Children who suffer from early food insecurity are also more likely to experience mental health issues through their adolescence and young adulthood. Preschoolers and school-aged children who experience hunger have higher rates of internalizing problems, such as anxiety.<sup>8</sup> Elementary school children experiencing severe food insecurity are four times more likely than their peers to require mental health counseling; seven times more likely to be classified as clinically dysfunctional; and seven times more likely to get into fights frequently.<sup>9</sup>

**Dental Health**

The same cheap foods—highly processed and sugary—that can cause obesity in young children can also increase the incidence of early childhood tooth decay.<sup>10</sup> Indeed, poor dental health is more common among low-income children. Treatment for severe tooth decay for children ages 0-5 costs an average of between \$1,500 and \$6000 per incidence.<sup>11</sup>

**Long-term educational outcomes**

Food insecurity in early childhood can limit a child’s cognitive and socio-emotional development, ultimately impairing school achievement and thus long-term productivity and economic potential. Data has shown that, by the third grade, children who had been food insecure in kindergarten saw a 13% drop in their reading and math test scores compared to their food-secure peers.<sup>12</sup> Hungry children are also more likely than their non-hungry peers to suffer from hyperactivity, absenteeism, generally poor behavioral, and poor academic functioning.<sup>13</sup>

**Black and Latino households are significantly more likely to be food insecure than the average household in the US. Over 20% of Latino and 25% of Black households with children are food insecure, compared to 15% of all households in the U.S.**



***By the third grade, children who had been food insecure in kindergarten had a 13% drop in their reading and math test scores compared to their food-secure peers.***

Food insecurity also increases the chance that a child will need special education services, an additional preventable cost. Children classified as hungry are twice as likely as their non-hungry peers to be receiving special education services and to have repeated a grade.<sup>14</sup> With the average annual cost of educating a child around \$6,800 in 2001, and special education services an additional \$6,000, a food insecure child who needs special education services costs nearly double that of one who does not, and a child who must also repeat a grade can cost nearly four times as much as a student who neither needs special education nor repeats a grade.<sup>15</sup> Food insecurity thus not only inhibits children's functioning while they are in school, but can also increase the cost of their education.

**Food assistance programs reduce, but do not eliminate, food insecurity and its negative impacts**

- WIC enrollment from birth increases iron levels among preschoolers and lowers their incidence of iron-deficiency anemia.
- Children who received food stamps had better overall vitamin and mineral intake than children whose family income was low, but too high to qualify for food stamps.
- Food stamp receipt reduces rates of child hospitalizations among food-insecure families.

## Prevention and Policy Solutions

Food insecurity and lack of proper nutrition affect children before they are born, with those impacts continuing and accumulating throughout childhood. Prevention is thus a critical tool for ensuring proper development and avoiding long-term societal costs. Programs like WIC (Supplemental Nutrition Program for Women, Infants, and Children) and Food Stamps, which have been proven to reduce food insecurity, are substantially less expensive than paying for its negative consequences.

These programs also provide significant returns on the investment; for example, WIC saves between \$1.77 and \$3.13 in Medicaid costs for each dollar spent, and every five dollars of food stamps benefits creates nearly double that amount in local economic activity.<sup>16,17</sup> Studies have shown that WIC increases the number of women receiving prenatal care, reduces the incidence of low birth weight and fetal mortality, reduces anemia in young children, and enhances the nutritional quality of participants' diets.<sup>18</sup> This means that while participating in programs like WIC and food stamps save immediate costs, there are also significant cost-savings in future health expenses of the mother and the child.

More investment, however, is warranted; children of near-poor families, who often are not eligible for these programs, could also benefit from them. In one study, the group that had a lower socioeconomic status and received food stamps was less food insecure and had better overall nutrient intake<sup>19</sup> than the group that was not eligible for food stamps because of their higher average socioeconomic status.

***WIC saves between \$1.77 and \$3.13 in Medicaid costs for each dollar spent.<sup>20</sup>***

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107.27	AmeriDing		17.81	-58	38.06	25	
107.49	AmeriCorp		4.18	-74	61.09	26	
107.15	Ami		1.81	-38	46.36	26	
107.15	Ami		1.81	-38	46.36	26	



7	86	1
19	59	1
cc	47	1
36	36	1
25	25	1
7	86	1
19	59	1
cc	47	1
36	36	1
25	25	1

## Alleviating food insecurity has societal benefits

When kids grow up undernourished, the architecture of their brains is changed, causing harm to their physical, mental, social and emotional health throughout their lives. But investing in effective public infrastructures to protect young children’s nutritional health promotes family stability, and improves their educational achievement, productivity and future earnings.

Federal supports, such as WIC and food stamp programs, provide critical resources for food insecure families and children, but their current benefit levels are not adequate and their reach is not broad enough to eliminate the problem. Because food insecurity is intimately connected to other basic needs, effective policies will increase families’ overall economic stability, as well as their food security. While these problems are particularly acute during the current economic slowdown, and the surge in food and energy prices, over 12 million American children were food insecure before it began. By addressing the serious problem of child food insecurity as a nation, we will help ensure a prosperous future for us all.

No child in the United States should go to bed hungry because there was not enough food at dinner; to school with a caries-induced toothache; or to the hospital due to lack of proper nutrition. Existing research tells us a great deal about the long-term societal costs of such problems and suggests that some policies and programs can help to mitigate them. More must be done, both in terms of solid studies and smart policy-making, to ensure that how we feed our smallest residents secures, rather than endangers, our nation’s economic future.

The Partnership for America's Economic Success was created by a group of business leaders, economists, advocates, and 13 funders, in order to document the economic impacts to the nation of proven investments in children from before birth and to age five.

This report, written by Grace Lee of the Partnership for America's Economic Success, is based on a report by Carolyn Murphy, BA; Stephanie Ettinger De Cuba, MPH; John Cook, PhD; and Karen Jeng, BA, of C-SNAP; and by Rachel Cooper and Jim Weill of FRAC, who would like to gratefully acknowledge the assistance of Lynn Parker. The authors would also like to recognize peer reviews by Jacinta Bronte Tinkew and Elizabeth Hair.

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- 1 <http://www.ers.usda.gov/AmberWaves/June07/Features/Struggling.htm>
- 2 <http://www.reuters.com/article/newsOne/idUSN2933542820080529?pageNumber=2&virtualBrandChannel=0&sp=true>
- 3 <http://www.urban.org/decisionpoints08/17/risingfoodprices.cfm>
- 4 Bergner 1970 and Black 2005
- 5 Carmichael 2007. All of the studies cited in this brief employed appropriate control variables. Because the specific factors controlled for vary from topic to topic, and from one study to another, they cannot be listed here. However, the full report, which is also available on the PAES website, discusses in detail the specific controls used in each.
- 6 Real Cost of a Healthy Diet (2008)
- 7 C. Murphy, et al. (2008). Economic Costs of Food Insecurity in Young Children.
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### For more information

Sara Watson, Director: [info@partnershipforsuccess.org](mailto:info@partnershipforsuccess.org)  
 Robert Dugger, Advisory Board Chair: [Robert.dugger@tudor.com](mailto:Robert.dugger@tudor.com)

Partnership for America's Economic Success  
 1025 F Street NW, Suite 900 | Washington, D.C. 20004  
 (202) 552-2000 | [www.PartnershipforSuccess.org](http://www.PartnershipforSuccess.org)

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