References


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Food Security: Ensuring the Health of Baltimore's Babies
**What is Food Security?**
Food security is access to enough food for an active and healthy lifestyle for all household members.¹

**What is Food Insecurity?**
Food insecurity is the lack of access to enough food for an active and healthy lifestyle for all household members due to financial constraints. Families who are food insecure often limit the quality and quantity of food available to family members, filling up on low-cost foods with little nutritional value (such as noodles, fast food, or junk food). Food insecurity includes the anxiety that families often face when they do not have regular access to food.¹²

**Consequences of Food Insecurity**

<table>
<thead>
<tr>
<th>Infants and toddlers (under 3 years of age)²⁻⁶</th>
<th>School–age children⁷⁻⁸</th>
<th>Caregivers⁶,⁸⁻¹⁰</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor health</td>
<td>Poor health</td>
<td>Mental health problems including depression and anxiety</td>
</tr>
<tr>
<td>Poor development</td>
<td>Low academic performance</td>
<td></td>
</tr>
<tr>
<td>Behavioral problems</td>
<td>Behavioral &amp; mental health problems</td>
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**Why study children under three years of age?**

During the first three years of life, children’s nutritional demands are high to support their rapid growth and development. Not only do infants triple their birth weight by 12 months of age, but they experience rapid brain growth as they acquire specific skills that guide their early development. In addition to nutrition, brain development is influenced by the quality of the caregiving environment. Children raised in households without adequate nutrition and in the presence of stress and low stimulation can experience lasting cognitive and emotional deficits.

Among Baltimore’s food insecure families, 78% have relied on low-cost foods to feed their children because they were running out of money to buy food.

**This Report Addresses 4 Questions about Children in Baltimore:**

1. How is food insecurity related to the health and development of Baltimore’s children?
2. Why are some food insecure families not receiving nutrition–related public assistance programs (Food Stamp Program and WIC)?
3. Among food insecure Baltimore families, are children whose families receive WIC and Food Stamps in better health than those who do not receive services?
4. Are there screening questions to identify families at risk of food insecurity?
Question 1: How is food insecurity related to the health and development of Baltimore’s children?

- Food insecurity is associated with poor physical health for young children and their caregivers, poor mental health for caregivers, and increased developmental risk for children.

Question 2: Why are some food insecure families not receiving nutrition-related public assistance programs (Food Stamp Program and WIC)?

- Less than half of food insecure families receive both WIC and Food Stamps.

- Families who do not receive Food Stamps cite perceived or real ineligibility. Families who do not receive WIC cite the application process and logistics.

Question 3: Among food insecure Baltimore families, are children whose families receive WIC and Food Stamps in better health than those who do not receive services?

- Children in food insecure families benefit from nutrition-related services. Families receiving WIC alone or WIC and Food Stamps are more likely to report that their child is in good or excellent health than families receiving no services.

Question 4: Are there screening questions that can be used in health care and other settings to identify families at risk of food insecurity?

- A 2-item food insecurity screening questionnaire may be used in primary care or other settings to identify families at risk for food insecurity.

Next Steps:

- Ensure access to nutrition-related public assistance programs for food insecure families.

- Clarify eligibility criteria for Food Stamps.

- Streamline the WIC application process.

- Recognize that public policies can impact the health and development of young children.

- Implement public policies that promote positive health and development for all children.
Question #3

Among food insecure Baltimore families, are children whose families receive WIC and Food Stamps in better health than those who do not receive services?

What Does this Figure Show?

Compared to families who receive no nutritional programs, children in families who receive WIC are 2.8 times more likely to be in good or excellent health (p=0.060) and children in families who receive both WIC and Food Stamps are 3.3 times more likely to be in good or excellent health (p=0.035).

Among food insecure families, nutrition–related assistance programs (WIC and Food Stamps) are associated with better child health.

Statistical analyses were conducted to determine how nutrition-related programs (WIC and Food Stamps) are related to caregiver-reported child health among Baltimore’s food insecure families. Analyses were adjusted for child age and birth weight; caregiver age, education, and depression; and whether or not the family receives Temporary Cash Assistance (also known as “welfare”, an indicator of poverty).

Question #4

Are there screening questions to identify families at risk of food insecurity?

Based on food security status determined by the USDA’s Food Security Survey, we identified families who are truly food secure and truly food insecure. Most food insecure families reported that the following two statements were sometimes true or often true:

“Over the past 12 months, we worried whether our food would run out before we got money to buy more”
95.2% of food insecure families

“Over the past 12 months, the food we bought just didn’t last and we didn’t have money to get more”
89.3% of food insecure families

Sensitivity and specificity were calculated for a questionnaire that asks these two questions. Families were considered ‘at risk for food insecurity’ if they answered “sometimes true” or “often true” to one or both questions.

Sensitivity = 99.0%
Families who are truly food insecure are likely to be identified by the screen.

Specificity = 82.5%
A few families who are truly food secure may be identified as food insecure by the screen.

A 2-item food insecurity screening questionnaire to assess food security status is proposed:

**Food Insecurity Screening Questionnaire**

Please indicate if each statement is often true, sometimes true, or never true for your family food situation.

1. Over the past 12 months, we worried whether our food would run out before we got money to buy more.
   - Often True
   - Sometimes True
   - Never True

2. Over the past 12 months, the food we bought just didn’t last and we didn’t have money to get more.
   - Often True
   - Sometimes True
   - Never True

Families are considered ‘at risk for food insecurity’ if they answer “sometimes true” or “often true” to either item.
How We Examined Food Insecurity in Baltimore

The Children’s Sentinel Nutrition Assessment Program (C-SNAP) is a network of pediatricians and public health researchers who study how public policies are related to the health and well-being of young children. C-SNAP collects data on a daily basis in emergency departments and primary care clinics in five cities: Baltimore, Boston, Little Rock, Minneapolis, and Philadelphia. With information from over 27,000 low-income families of young children, C-SNAP has the largest clinical data set on low-income children under 3 years of age in the United States.

The University of Maryland Hospital for Children is one of the five C-SNAP sites. This report is based on information from 2,216 infants and toddlers who received health care services at the University of Maryland Emergency Department and/or Pediatric Ambulatory Center between September 2003 and December 2007. Families were eligible to be included if they did not have private medical insurance, the caregiver spoke English and was knowledgeable about the child’s household, the child was under 3 years of age and not critically ill or injured, and the caregiver agreed to participate.

What percentage of families are food insecure at C-SNAP sites?

Approximately 13.5% of low-income Baltimore C-SNAP families are food insecure. Baltimore’s rate of food insecurity is slightly lower than rates in other C-SNAP sites, but higher than the national average of 10.9% reported by the USDA for 2006. Rates of food insecurity are highest among sites with large numbers of immigrant families (i.e., Minneapolis and Boston).
How is food insecurity related to the health and development of Baltimore’s children?

Caregivers in food insecure families are significantly more likely to report that:
- Their child is in fair or poor health
- They are concerned about their child’s development

Caregivers in food insecure families are significantly more likely to report:
- Symptoms of depression for themselves
- Their own health is fair or poor

Characteristics of the families interviewed:
- 88% were African American
- 88% were single parent households
- 100% did not have private insurance
- 98% of caregivers were born in the US
- 59% of children were under 1 year old
- 41% of children were 1-3 years old

Within Baltimore’s food insecure families, 24% of adults have reported not eating for a whole day because there was not enough money for food.
Why are some food insecure families not receiving nutrition-related public assistance programs (Food Stamp Program and WIC)?

Among food insecure families in Baltimore:

- 11% are not receiving Food Stamps or WIC.
- 42% are receiving just one nutrition-related public assistance program (WIC or Food Stamps).

Fewer than half of food insecure families are receiving both WIC and Food Stamps.

37% of food insecure families in Baltimore reported being hungry but not eating because they couldn’t afford enough food.

Eligibility criteria differ for WIC and Food Stamps.

Food insecure families are likely to be eligible for WIC. Reasons caregivers described for not receiving WIC include delays in enrollment and logistical barriers (e.g., no transportation, clinic hours, etc.).

Eligibility criteria for Food Stamps are more stringent than for WIC. Caregivers cited concerns and confusion regarding eligibility criteria, personal reasons (e.g., no desire, stigma, etc.), and sanctions.

### Why are food insecure families not receiving WIC and Food Stamps?

#### Top 5 Reasons for not receiving WIC
- Application pending
- Clinic hours or missed appointment
- Personal (do not want WIC, do not use WIC food)
- No transportation
- Other (including unsure of eligibility)

#### Top 5 Reasons for not receiving Food Stamps
- Not eligible
- Personal (do not want, stigma, hassle, treatment)
- Cut off or stopped receiving Food Stamps
- Teen parent or too young to be head of the household
- Do not know if eligible or did not know about the program

<table>
<thead>
<tr>
<th>Nutrition-Related Public Assistance Programs</th>
<th>Income Eligibility Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program</strong></td>
<td><strong>% of Federal poverty income guidelines</strong>*</td>
</tr>
<tr>
<td>WIC</td>
<td>≤ 185 %</td>
</tr>
<tr>
<td>Food Stamps</td>
<td>≤ 130 %</td>
</tr>
</tbody>
</table>

*based on family income and number of people in the household