

FEEDING THE BRAIN: Food Security in the First Five Years



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Across Ohio, many families with young children struggle to consistently afford healthy meals.

In Ohio,
1 in 3 children ages 0-5
live in households that
could not always afford
to eat nutritious meals
in the past year.¹

**Black children are 1.7
times more likely**
than white children to
experience food
insecurity.²

Ohio ranks 44th
in the United States
for food insecurity
among young children.³

Access to nutritious food is fundamental to health and stability in early childhood. When that access is inconsistent, it disrupts daily routines and adds strain within the household, undermining the predictable, supportive environments young children need during critical stages of development. This instability comes at a time when experiences in the first five years of life are actively shaping the architecture of the brain. Food insecurity acts as a chronic stressor, triggering elevated stress hormones, like cortisol. When children experience nutritional gaps during this period, it can interfere with healthy brain development and make it harder to build the academic, social, and emotional skills needed for long-term success.

Emotional Regulation

Children may show irritability, anxiety, or difficulty managing emotions.⁴

Attention + Self Control

Food insecurity is linked to challenges with focus, impulse control, and behavioral regulation.⁵

Memory + Cognitive Skills

Nutrient gaps can impair neural circuits for memory, problem-solving, and language acquisition.⁵

Children experiencing food insecurity are more likely to:⁶

**Score lower on early
reading and math
assessments,**

reflecting early cognitive
delays and challenges with
executive function.



**Be identified for
behavioral concerns in
school,**

including difficulties with
attention, impulse control,
and emotional regulation.



Miss more school days

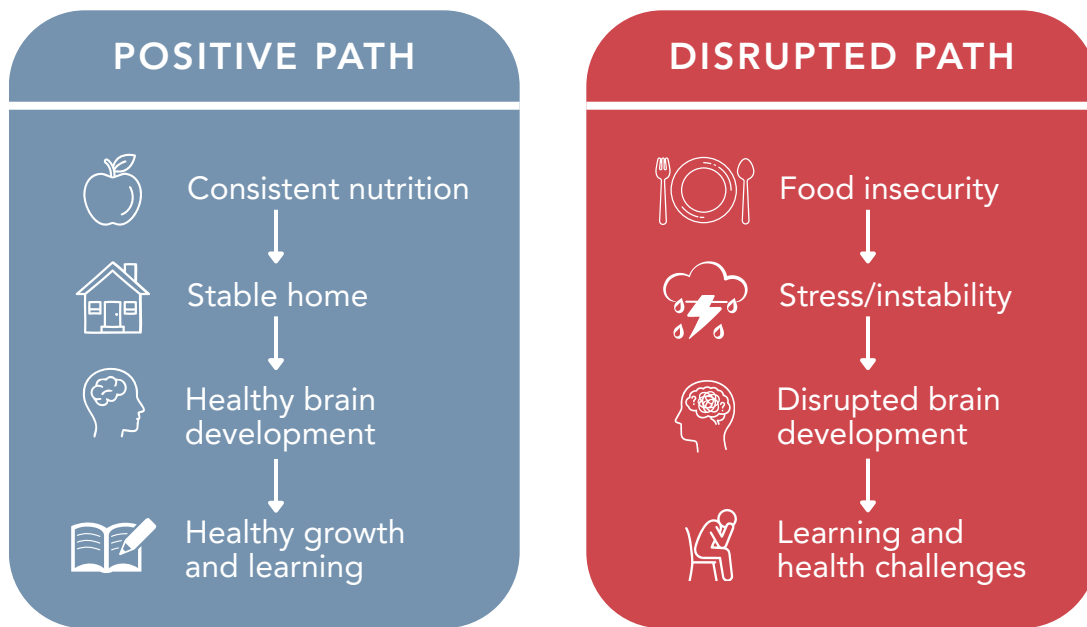
due to illness or stress-
related challenges,
disrupting early learning
continuity.



Nutrition Before and After Birth Shapes Child Health

A mother's challenges with food insecurity during the prenatal period influence the development of a child's metabolism, immune system, and organ systems. The prenatal period is a critical window when the developing brain is highly sensitive to both nutrition and stress - even subtle disruptions can have lasting effects on brain structure and function.

Poor nutrition during pregnancy is linked to increased risks of **preterm birth and low birth weight**, both of which are associated with long-term developmental challenges. Inadequate access to key nutrients can limit the building blocks needed for fetal brain development, including processes that support neural growth, connectivity, and early regulation systems.⁷



THE BOTTOM LINE

Food insecurity in early childhood is an early form of adversity that increases stress within families and can disrupt healthy development, leading to long-term emotional, behavioral, and learning challenges. Programs like the Supplemental Nutrition Assistance Program (SNAP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) are critical tools that help ensure families have consistent access to nutritious food during pregnancy and early childhood. Strengthening and expanding these programs helps to stabilize families, support healthy development, and improve outcomes for Ohio's children.

1. Groundwork Ohio. (2025). [Early Childhood Data Dashboard](#).

2. Ibid.

3. Feeding America. (2023). [Child Hunger & Poverty in Ohio | Map the Meal Gap](#)

4. Leisman, G. et al. (2025). [Emotional Brain Development: Neurobiological Indicators from Fetus Through Toddlerhood](#).

5. Casey, E., et al. (2025). [Impacts of Food Insecurity on Child Development: Strengthening the Role of Child Care](#).

6. Ibid.

7. Margues, A. H., et al. (2013). [The Influence of Maternal Prenatal and Early Childhood Nutrition and Maternal Prenatal Stress on Offspring Immune System Development and Neurodevelopmental Disorders](#).