

# Food Insecurity: What it is and how to help

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Community Thanksgiving Dinner in Lafayette, IN

**PURDUE**  
UNIVERSITY

# Contact Info:

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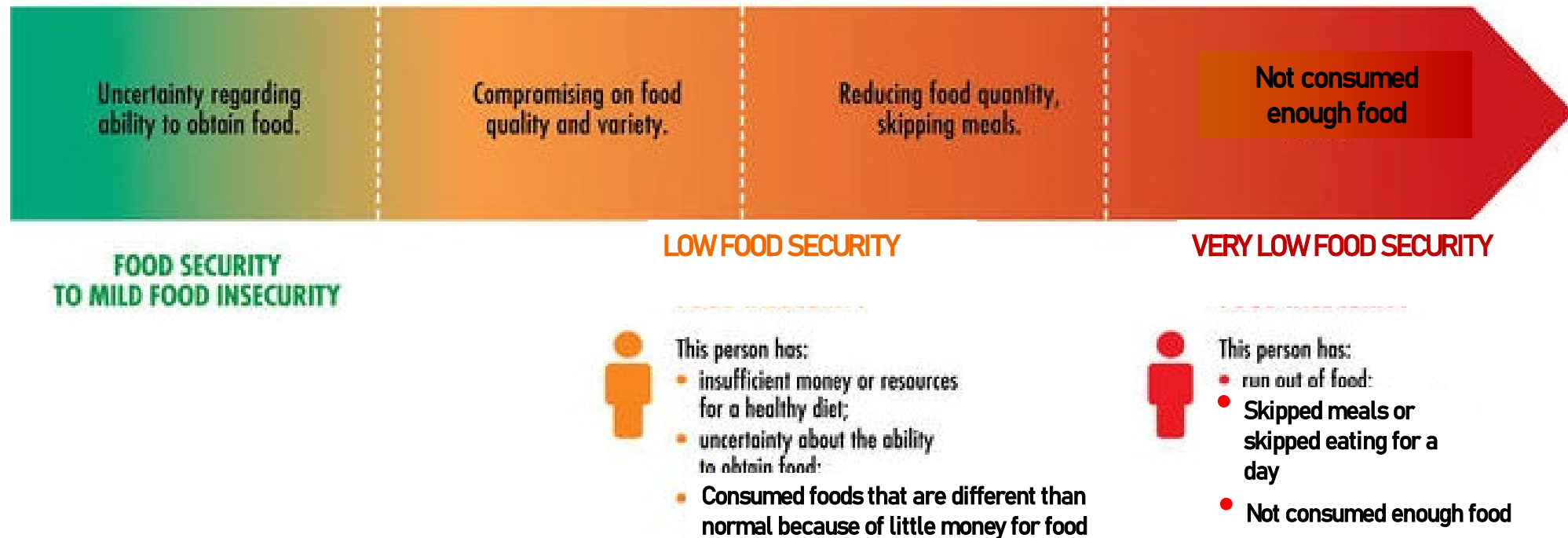
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- Research Expertise :
  - U.S. Food Insecurity, U.S. Food Assistance Programs and Nutrition Education Programs
  - Dietary Intake of U.S. population and low-resource population sub-groups
  - Dietary Assessment and Evaluation of Dietary Outcomes, Dietary Patterns and Methodology
- Research Awards & Contributions:
  - 3 million in funding for research projects
  - >80 published peer-reviewed scientific journal articles
  - >100 presentations at international and national conferences
  - Danone International Prize for Alimentation 2023-2024 Laurate
  - 2022 Purdue University Trailblazer Award
  - 2019 American Society for Nutrition Mead Johnson Award
  - Currently serving on the 2025 U.S. Dietary Guidelines Advisory Committee to update the Dietary Guidelines for Americans
  - American Society for Nutrition 2024-2025 Board of Directors, Director-at-Large for Population Nutrition
  - Board of Editors for "Advances in Nutrition" and "Journal of the Academy of Nutrition and Dietetics" 2020-2026

# What is food insecurity?

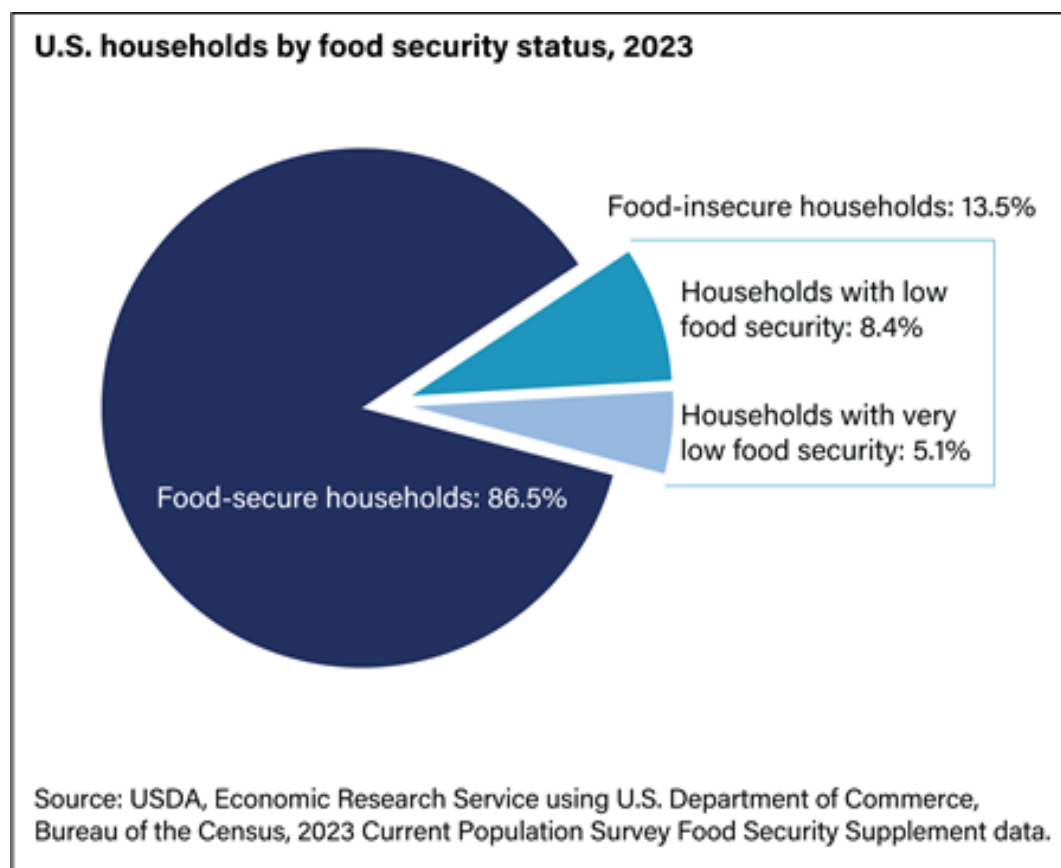
Food Insecurity: “limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable food in socially acceptable ways”

Anderson et al, 1990



# Food Insecurity was present in about 1 in every 7 U.S. households in 2023

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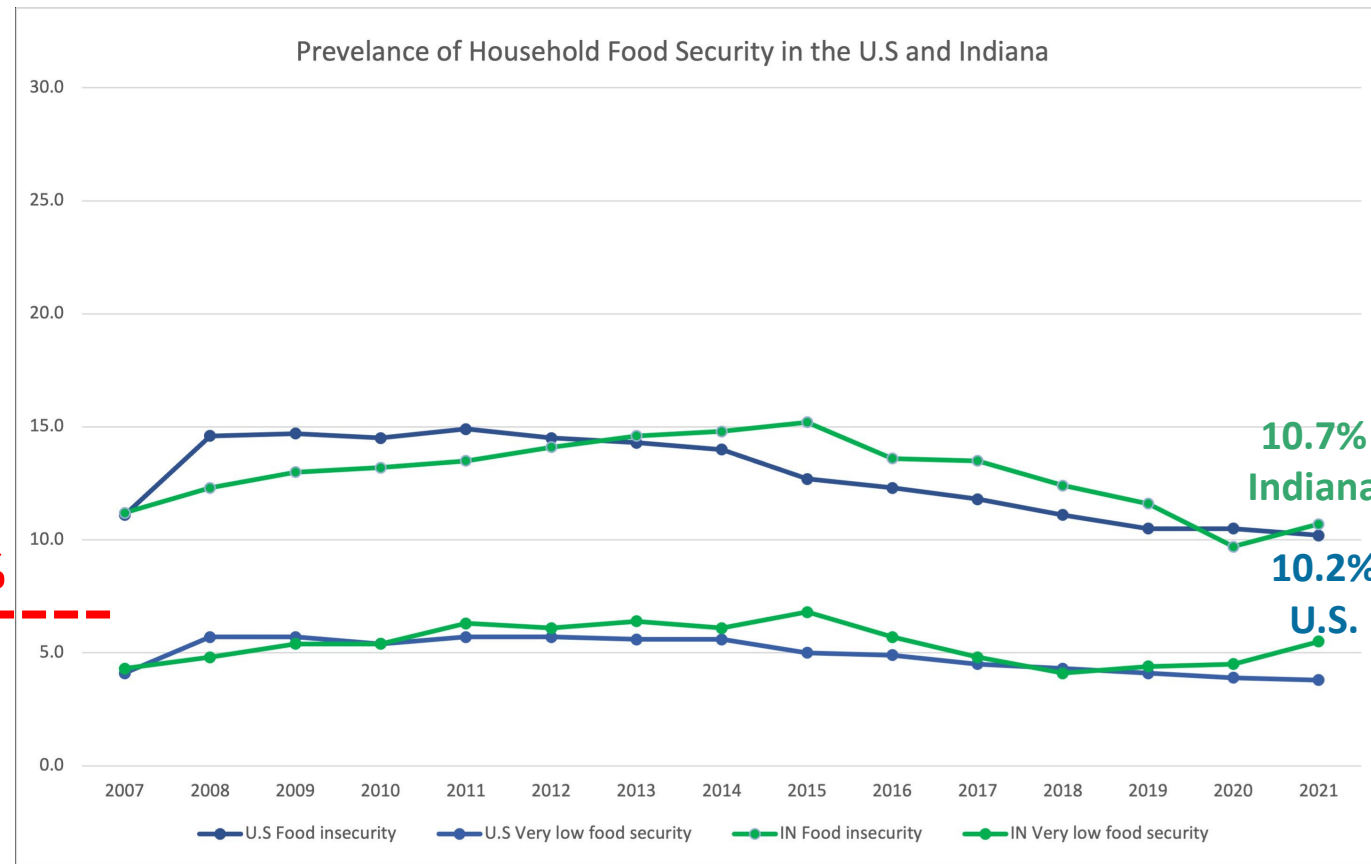


USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, Current Population Survey Food Security Supplements

# Food Insecurity was present in about 1 in every 9 Indiana households in 2019-2021

**U.S. Healthy  
People 2030  
Goal Food  
Insecurity = 6%**

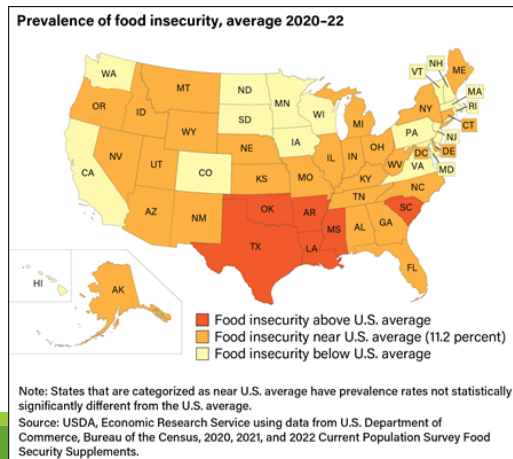
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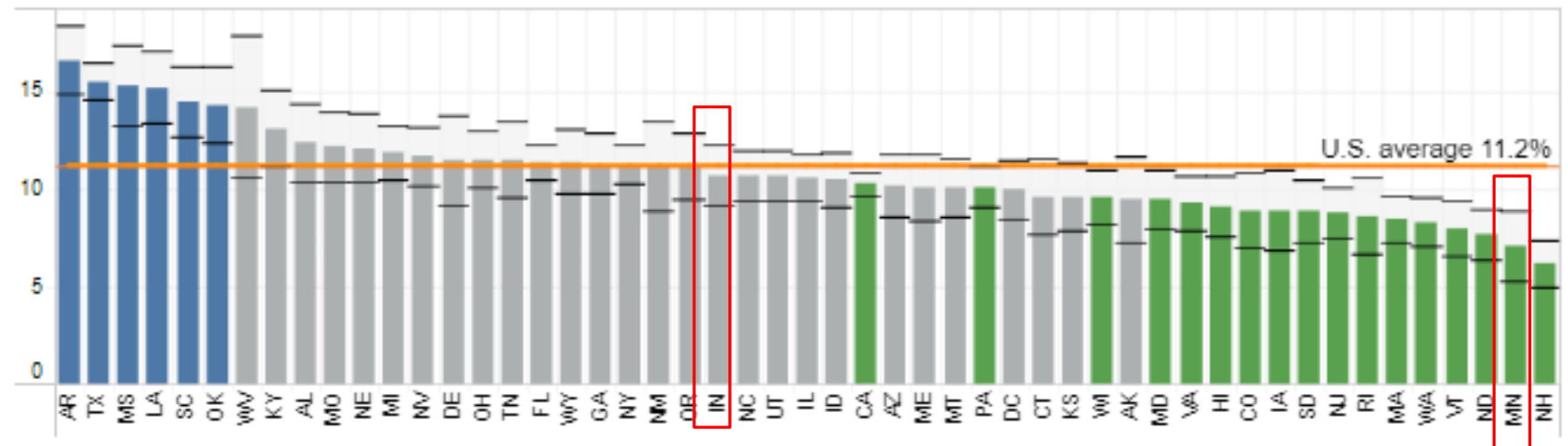
USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, Current Population Survey Food Security Supplements

# Indiana ranked in the lower half of U.S. states for food insecurity

- Peer midwestern state MN has one of the lowest rates of food insecurity
- Other midwestern states Iowa and South Dakota have lower estimates than IN



How do States compare to each other?  
Food insecurity • 2020-2022



State Prevalence rates are given with a 90 percent confidence interval (black lines) with the U.S. national average (orange line) for reference. The 90 percent confidence intervals represent a range of values which are likely to include the actual food insecurity rate for each State and are calculated using the margins of error for the State prevalence rates. The margin of error reflects sampling variation—the uncertainty associated with estimates that are based on information from a limited number of households in each State. For this reason, margins of error should be taken into consideration when interpreting these statistics and especially when comparing rates across States. Prevalence rates for 3 years are averaged to provide more reliable statistics at the State level.

\*States that are categorized as Near U.S. average have prevalence rates that are not statistically significantly different from the U.S. average.



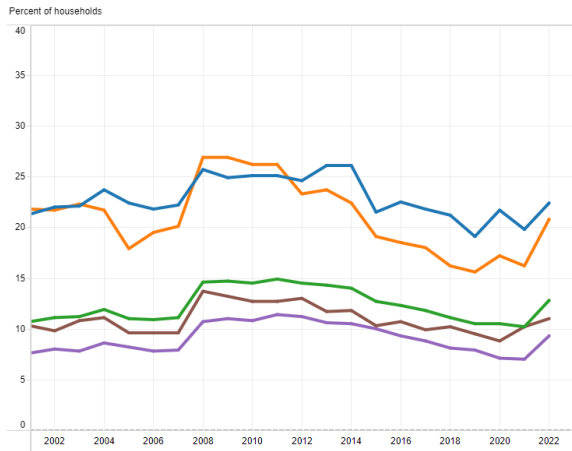
# Who experiences food insecurity?

Food Insecurity is a common American experience:  
About 42% of all Americans experience food insecurity at some point between ages 20-65 years

Food insecurity rates are higher among households with certain characteristics:

## Non-Hispanic black and Hispanic race/ethnicity

Trends in food insecurity by race and ethnicity, 2001–22

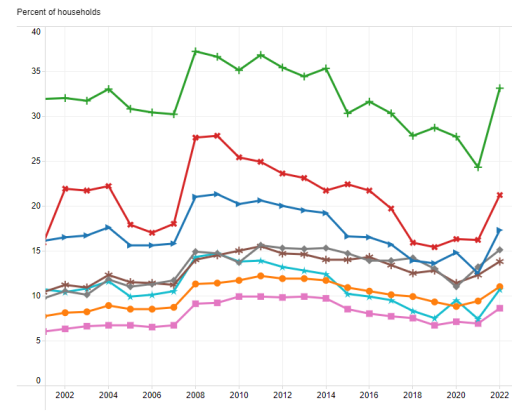


Note: The "Other, non-Hispanic" category for race/ethnicity of household reference person includes non-Hispanic adults that identify as multiple races, American Indian, Alaskan Native, Asian, Hawaiian, or Pacific Islander. There are not sufficient respondents in the Current Population Survey Food Security Supplement to present reliable estimates for these individual groups for all outcomes, so they are grouped together into the "Other, non-Hispanic" category.

Source: USDA, Economic Research Service calculations using Current Population Survey Food Security Supplement data.

## Single parents and households with children

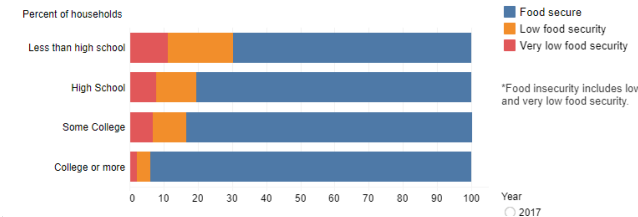
Food insecurity by household composition, 2001–22



Source: USDA, Economic Research Service calculations using Current Population Survey Food Security Supplement data.

## Those with lower educational levels

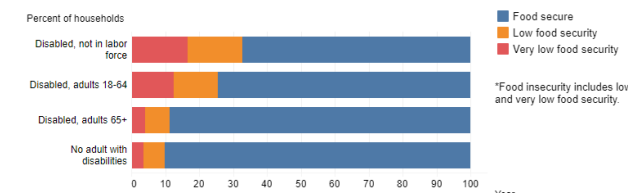
Prevalence and distribution of food insecurity by education status



\*Food insecurity includes low and very low food security.

## Those with a disability

Prevalence and distribution of food insecurity by disability status



\*Food insecurity includes low and very low food security.

USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, Current Population Survey Food Security Supplements Rank MR, Hirschl TA. Likelihood of using food stamps during the adulthood years. J Nutr Educ Behav. 2005 May-Jun;37(3):137-46. doi: 10.1016/s1499-4046(06)60268-6. PMID: 15904577.

# Who experiences food insecurity?

Most Americans who experience food insecurity are working full-time.

- 55% of those who are food insecure are working full time, only 5% are unemployed
- 48% of those with very low food security are working full time, only 6% are unemployed

What is the employment status of food-insecure and very low food-secure households?



Note: Employment combines information on the employment status of all adult household members. "Full-time": one or more adult members were employed full time. "Retired": one or more members were out of the labor force due to retirement, and no household members were employed full time. "Part-time for noneconomic reasons": one or more members were employed part time by choice, and no one was employed full time or was retired. "Part-time for economic reasons": one or more members were employed part time because that was the only job available, and no one was employed full time or retired. "Unemployed": one or more members were unemployed looking for work, and no members were employed or retired. "Not in labor force-disabled": one or more members were out of the labor force due to disability, and no one was employed, retired, or unemployed. "Other, not in labor force": no adult members were employed, retired, unemployed, or not working due to disability.

Source: USDA, Economic Research Service calculations using Current Population Survey Food Security Supplement data.

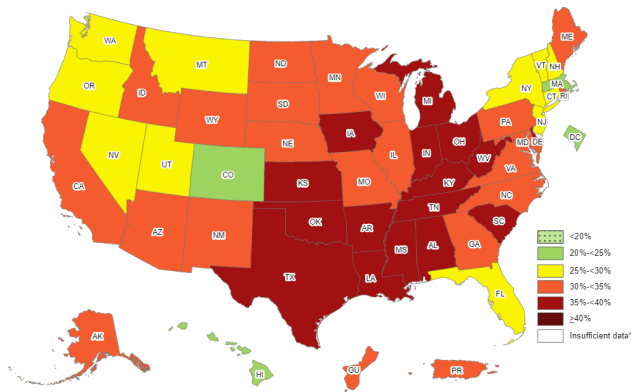


# Why is food insecurity important?

Food insecurity is important because of it's link to poor health...we all have a high risk!

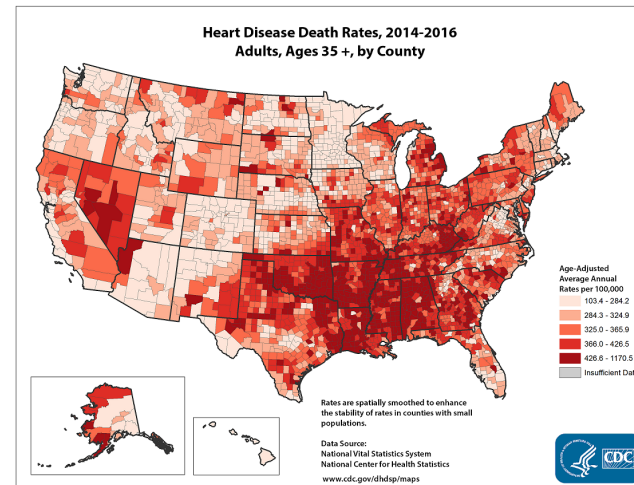
## Obesity

Prevalence<sup>†</sup> of Self-Reported Obesity Among U.S. Adults, 2020



42.4% adult obesity,  
9.2% severe obesity

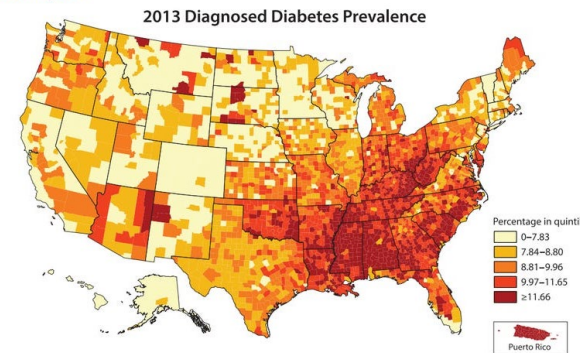
## Heart Disease



7% adult heart disease,  
1 in every 4 deaths

## Diabetes

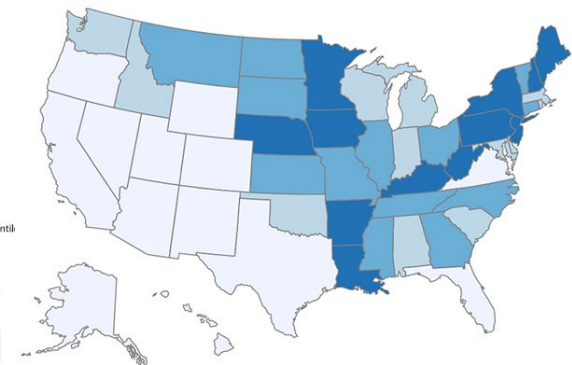
Figure 2. Age-adjusted, county-level prevalence of diagnosed diabetes among adults aged ≥20 years, United States, 2013



13% adult diabetes

## Cancer

Prevalence<sup>†</sup> of Cancer Among US Adults, 2018



1.9 million adults have  
cancer

# Why is food insecurity important?

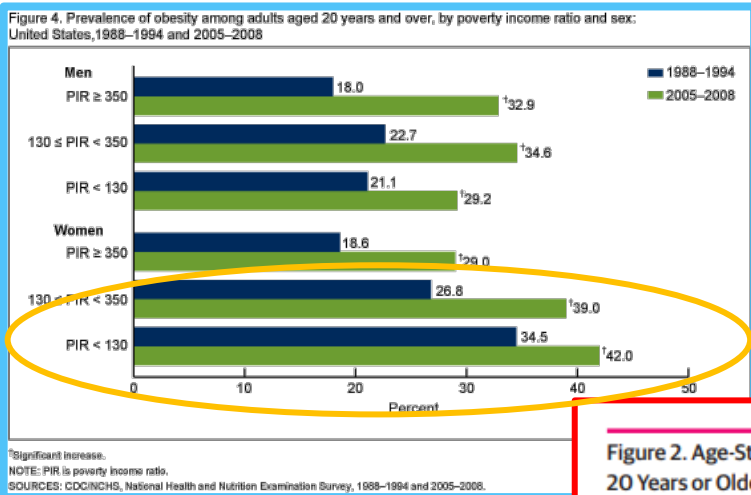
Chronic diseases disproportionately impact those with low incomes

## Obesity

## Heart Disease

## Diabetes

## Cancer



### By Income Level

Adults with a family income below the federal poverty level (FPL) have the highest prevalence of diabetes.

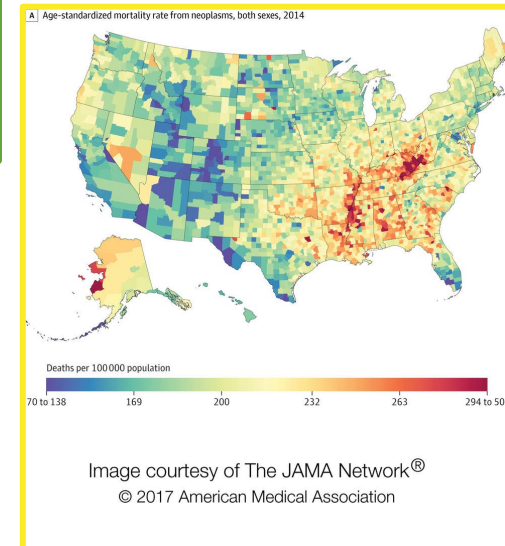
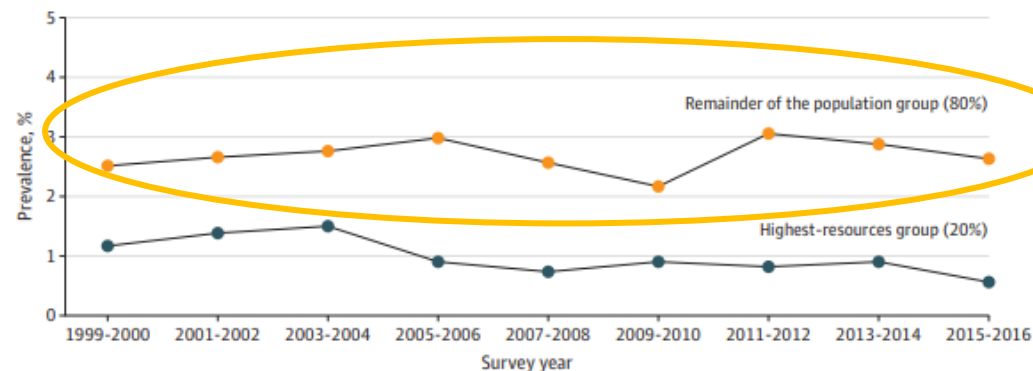
US Adults 18 or Older With Diagnosed Diabetes, by Family Income Level, 2018–2019

Family Income Level	Percentage
Less than 100% FPL	14.1
100%–299% FPL	10.8
300%–499% FPL	7.8
500% FPL or more	5.6

Data source: 2018–2019 National Health Interview Survey.

Figure 2. Age-Standardized Trends in Prevalence of Cardiovascular Disease Outcomes Among Participants 20 Years or Older Stratified by Income Group, 1999–2016

### A Trends in CHF prevalence



JAMA Network Open. 2020;3(9):e2018150. doi:10.1001/jamanetworkopen.2020.18150 ;

<https://www.cancer.gov/news-events/cancer-currents-blog/2017/cancer-death-disparities>

# Why is food insecurity important?

Dietary intake is an important risk factor for chronic disease



# Why is food insecurity important?

Food insecurity is important because of it's link to poor diets.....and ALL of us have poor diets!

## How Healthy Is the American Diet?



Data source for Healthy Eating Index scores: What We Eat in America, National Health and Nutrition Examination Survey (undated data are from 2013-2014)

F+

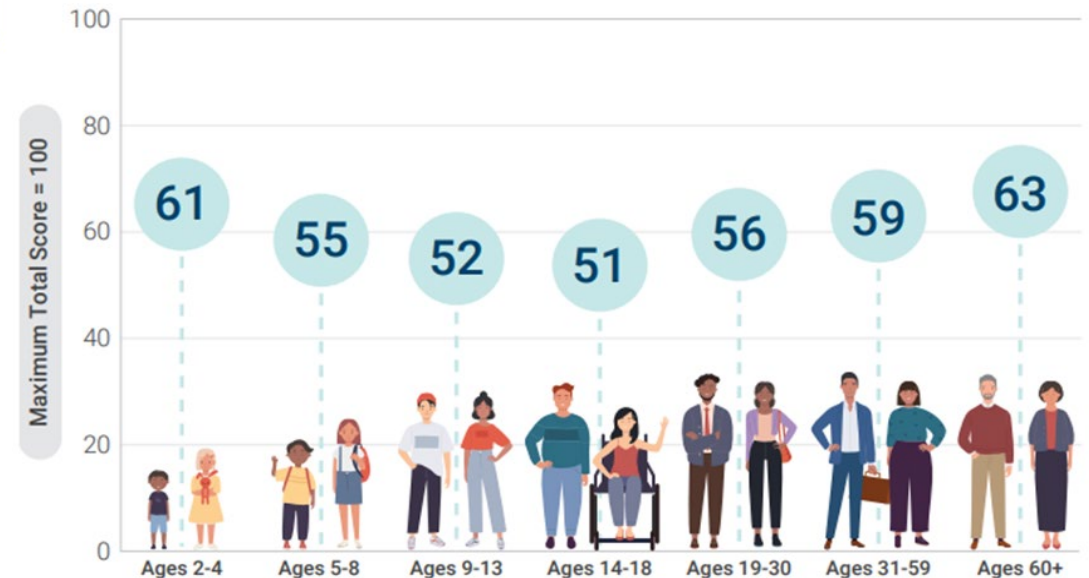
59

### The Healthy Eating Index Score

shows that Americans do not align their eating choices with the Dietary Guidelines.  
(on a scale from 0-100)



## Adherence of the U.S. Population to the Dietary Guidelines Across Life Stages, as Measured by Average Total Healthy Eating Index-2015 Scores



NOTE: HEI-2015 total scores are out of 100 possible points. A score of 100 indicates that recommendations on average were met or exceeded. A higher total score indicates a higher quality diet.

Data Source: Analysis of What We Eat in America, NHANES 2015-2016, ages 2 and older, day 1 dietary intake data, weighted.



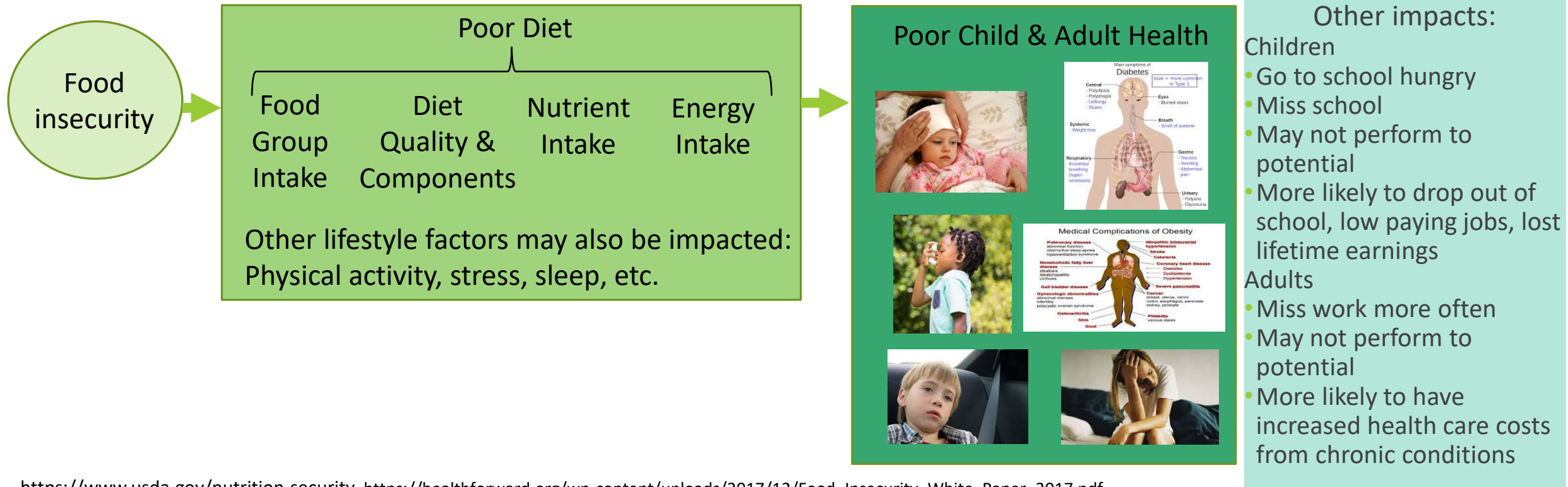
Dietary Guidelines for Americans, 2020-2025

<https://www.cdc.gov/heartdisease/facts.htm> <https://www.cdc.gov/obesity/data/prevalence-maps.html#overall>

<https://www.cdc.gov/diabetes/data/index.html> <https://www.cdc.gov/cancer/dcpc/data/index.html>

# Why is food insecurity important?

Food insecurity presents a nutritional & health risk



<https://www.usda.gov/nutrition-security> [https://healthforward.org/wp-content/uploads/2017/12/Food\\_Insecurity\\_White\\_Paper\\_2017.pdf](https://healthforward.org/wp-content/uploads/2017/12/Food_Insecurity_White_Paper_2017.pdf)

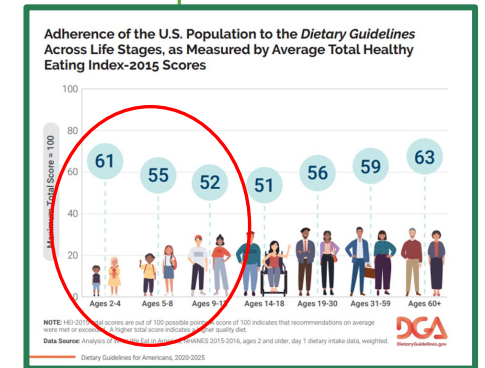
Eicher-Miller & Zhao, 2018; Colman-Jensen et al. 2013; Mabli, et al. 2014, Eicher-Miller, et al. 2009; Kirkpatrick, et al. 2008; Eicher-Miller, et al. 2011; Hanson & Connor, 2014; Wright et al, 2020; Eicher-Miller, 2020; Liu et al, 2019; Kropf, et al. 2007, Dollahite, et al. 2014, Siefert et al. 2001, Pheley et al. 2002, Tarasuk, 2003, Stuff et al. 2004, Vozoris & Walker et al. 2007, Sharkey et al. 2011, Ramsey et al. 2012, Klesges et al. 2001, Lee & Frongillo 2001, Stuff et al. 2004, Vozoris & Tarasuk 2003, Holben & Pheley 2006, Seligman et al, 2007, Seligman et al, 2010. Gowda et al. 2012, Galesloot et al. 2012. Gucciardi et al. 2009, Seligman et al. 2012, Tayie and Zizza 2009, NCEP 2002, Dixon et al. 2001.



# Why is food insecurity important for kids?

All U.S. kids have very poor diets, but less meet nutrient requirements when food insecure

- All U.S. children have low quality diets
- Not enough vegetables, whole grains, seafood and plant protein, and too much sodium
- Many children do not meet adequacy for nutrients, >89% for Vit D, >60% for Vit E, K, Choline, >30% for Ca, >20% for Vit A, C, Mg
- Up to 14% more food insecure children don't meet nutrient adequacy markers



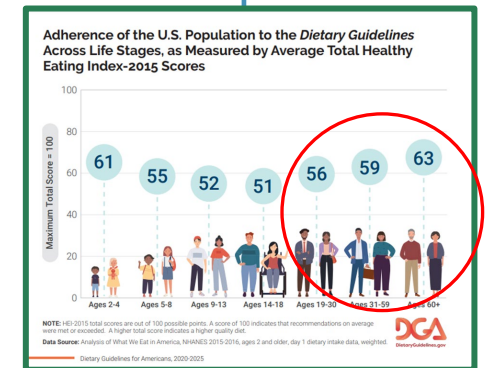
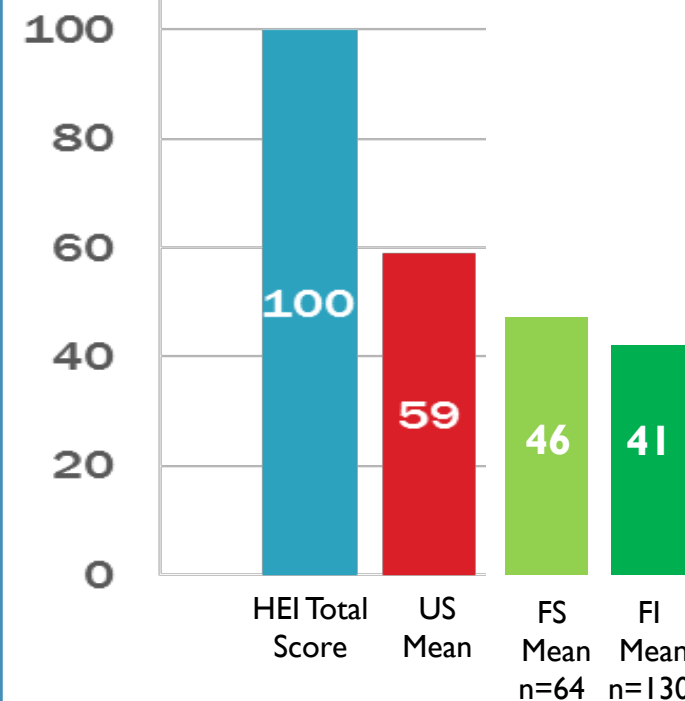


# Why is food insecurity important for adults?

## Poor diets & nutrient intakes of U.S. adults are even worse when they live in households with food insecurity

- All U.S. adults have low quality diets
- Not enough vegetables, whole grains, too much sodium and empty calories
- Diet quality is almost 20 points lower when the household is low-income & food insecure **in INDIANA!**
- Many adults do not meet adequacy for nutrients, >90% for Vit D, >80% choline, >70% for Vit E, K, >60% Vit K, >50% Vit C & A, Mg, >30% for Ca
- Many adults do not meet adequacy markers for nutrients but up to 17% more food insecure adults don't meet these targets

Healthy Eating Index Total Scores among adult Indiana women in low-income households with children



Rivera RL, Zhang Y, Wang Q, Maulding MK, Tooze JA, Wright BN, Craig BA, Bailey RL, Eicher-Miller HA. Diet Quality and Associations with Food Security among Women Eligible for Indiana Supplemental Nutrition Assistance Program-Education. J Nutr. 2020 Aug 1;150(8):2191-2198. Cowan AE, Jun S, Tooze JA, Eicher-Miller HA, Dodd KW, Gahche JJ, Guenther PM, Dwyer JT, Potischman N, Bhadra A, Bailey RL. Total Usual Micronutrient Intakes Compared to the Dietary Reference Intakes among U.S. Adults by Food Security Status. Nutrients. 2019 Dec 22;12(1):38.; Condon, Elizabeth, Susan Drilea, Keri Jowers, Carolyn Lichtenstein, James Mabli, Emily Madden, and Katherine Niland. 2015. "Diet Quality of Americans by SNAP Participation Status: Data from the National Health and Nutrition Examination Survey, 2007–2010." <http://www.fns.usda.gov>;

# What can be done?

Food assistance, nutrition education, and improved healthful food access support food security.

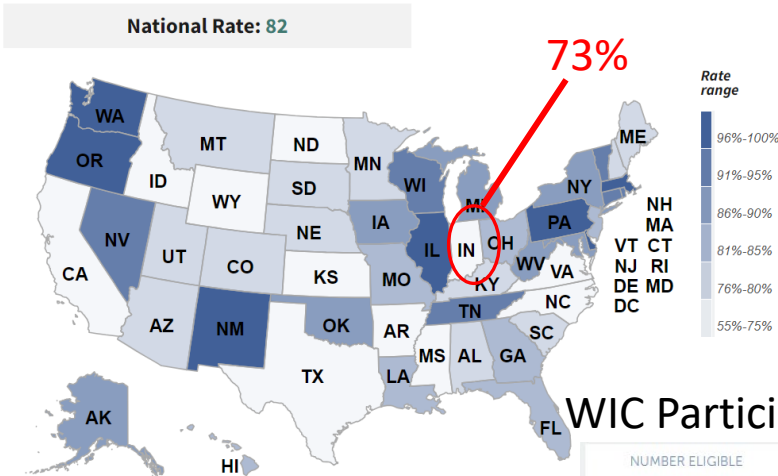
1. **Support healthy diets aligning with the Dietary Guidelines for Americans**
2. **Connecting people with food assistance:** SNAP, WIC, School Lunch & Breakfast, Summer Food Service Programs, and The Emergency Food Assistance Program serving food pantries. There is a significant gap (almost 30%) in those who are eligible but don't use SNAP in Indiana and WIC gap is about 45%!
3. **Nutrition education programs** like SNAP-Ed can help. They are offered in all IN counties and free for those who are at nutritional risk or qualify for SNAP. Delivered by Purdue Extension.
4. Encourage and **promote healthy food access in our environments.** Help people consider how to get healthful food in the environments they live, work and play in.

# What can be done?

## Expand food assistance and reduce the gap in eligibility and participation

- Indiana among the lowest rates of participation in SNAP based on eligibility
- Indiana has poor participation in WIC based on eligibility
- Stable food insecurity rates during COVID is attributed to Expansion of SNAP
- Using SNAP up to 36% less likely to be food insecure than those not using SNAP

### SNAP Participation for All Eligible



### WIC Participation for All Eligible



<https://www.fns.usda.gov/usamap/2019>; <https://www.fns.usda.gov/wic/eligibility-and-program-reach-estimates-2020> ; Gundersen C. Adv Nutr. 2013 Jan 1;4(1):36-41. DePolt R, Moffitt R, Ribar D. Pac Econ Rev. 2009;14:445-73. 37. Mykerezi E, Mills B. Am J Agric Econ. 2010;92:1376-91. 38. Nord M, Golla A. Does SNAP decrease food insecurity? Untangling the self-selection effect. USDA, Economic Research Service; 2009. Economic Research Report No. 85. 39. Gundersen CG, Garasky S. J Nutr. 2012;142:1865-70.; <https://healthyfoodpolicyproject.org/key-issues/state-policy-options-to-increase-access-to-healthy-food>

# What can be done?

Increase state support for nutrition education programs like the Supplemental Nutrition Assistance Program-Education (SNAP-Ed)

- SNAP-Ed provides nutrition and budgeting education to households who qualify for SNAP.
- Food security among SNAP-Ed participants in Indiana improved by an estimated 25% from baseline to a 1-year long-term follow-up.
- Currently SNAP-Ed only serves a small percentage of those who could receive it

**PURDUE** EXTENSION | **NUTRITION EDUCATION PROGRAM**

Picture from Daviess County, Indiana: SNAP-Ed client making a fruit and yogurt smoothie with her child



Rivera R, Maulding M, Eicher-Miller HA. Effect of Supplemental Nutrition Assistance Program-Education (SNAP-Ed) on food security and dietary outcomes. *Nutrition Reviews*. 2019; Dec 1;77(12):903-921. doi:10.1093/nutrit/nuz013. PMID:31077323.; Rivera RL, Maulding MK, Abbott AR, Craig B, Eicher-Miller HA. SNAP-Ed improves long-term food security among Indiana households with children. *Journal of Nutrition*. 2016; 146(11):2375-82. doi:10.3945/jn.116.231373. PMID:27683869.



# Questions?

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Community Thanksgiving Dinner in Lafayette, IN

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