



National Diabetes Education Program

A program of the National Institutes of Health and the Centers for Disease Control and Prevention

NDEP Webinar Series

Food Insecurity and Its Impact on Diabetes Management:

Identifying Interventions That Make a Difference



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Welcome



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Victoria L. Mayer, MD, MS

FOOD INSECURITY: DEFINITIONS, MEASUREMENT, AND INTERVENTIONS



**Mount
Sinai**



Definitions

- Food security
 - “access at all times to enough food for an active, healthy life” (1)
- Food insecurity
 - “whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable food in socially acceptable ways is limited or uncertain” (2)
 - “household-level economic and social condition of limited ability to acquire adequate food” (3)
- Hunger
 - “an individual-level physiological condition that may result from food insecurity” (3)
 - “the sensation caused by involuntary lack of food” (4)



- (1) Coleman-Jensen A, Rabbitt MP, Gregory C, Singh A. Household food security in the United States in 2015 [Internet]. United States Department of Agriculture, Economic Research Service; 2016.
- (2) Life Sciences Research Office, Federation of American Societies for Experimental Biology. Core indicators of nutritional state for difficult-to-sample populations. *J Nutr.* 1990;120(Suppl 11):1559-600.
- (3) Coleman-Jensen, A and Smith, MD. What is very low food security and who experiences it? USDA, Economic Research Service; 2016.
- (4) Hager ER, Quigg AM, Black MM, Coleman SM, Heeren T, Rose-Jacobs R, et al. Development and validity of a 2-item screen to identify families at risk for food insecurity. *Pediatrics.* 2010;126(1):e26-32.



Measurement of Food Insecurity

- United States Department of Agriculture (USDA) has published information yearly since 1995
- Survey funded by the Economic Research Service (ERS) and conducted by the US Census Bureau
- Representative sample of US population
- Survey developed and extensively tested by experts from academia, government, and the private sector



Measurement

- USDA Household Food Security Survey
- Food secure versus food insecure (low food security or very low food security)

Questions Used To Assess the Food Security of Households in the CPS Food Security Survey

1. "We worried whether our food would run out before we got money to buy more." Was that often, sometimes, or never true for you in the last 12 months?
2. "The food that we bought just didn't last and we didn't have money to get more." Was that often, sometimes, or never true for you in the last 12 months?
3. "We couldn't afford to eat balanced meals." Was that often, sometimes, or never true for you in the last 12 months?
4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food? (Yes/No)
5. (If yes to question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
6. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food? (Yes/No)
7. In the last 12 months, were you ever hungry, but didn't eat, because there wasn't enough money for food? (Yes/No)
8. In the last 12 months, did you lose weight because there wasn't enough money for food? (Yes/No)
9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food? (Yes/No)
10. (If yes to question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

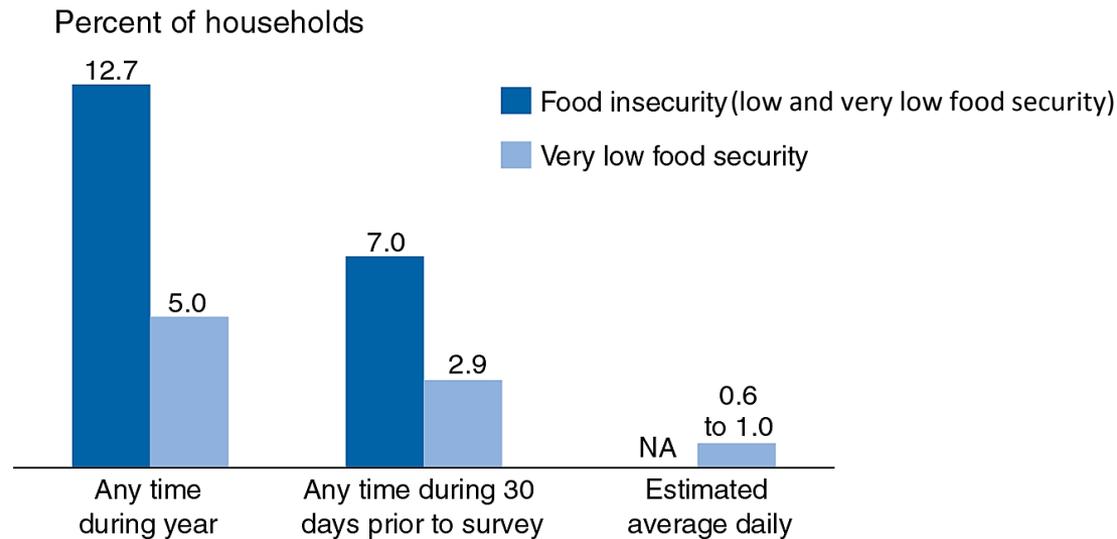
(Questions 11-18 were asked only if the household included children age 0-17)

11. "We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food." Was that often, sometimes, or never true for you in the last 12 months?
12. "We couldn't feed our children a balanced meal, because we couldn't afford that." Was that often, sometimes, or never true for you in the last 12 months?
13. "The children were not eating enough because we just couldn't afford enough food." Was that often, sometimes, or never true for you in the last 12 months?
14. In the last 12 months, did you ever cut the size of any of the children's meals because there wasn't enough money for food? (Yes/No)
15. In the last 12 months, were the children ever hungry but you just couldn't afford more food? (Yes/No)
16. In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food? (Yes/No)
17. (If yes to question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
18. In the last 12 months did any of the children ever not eat for a whole day because there wasn't enough money for food? (Yes/No)



Food Insecurity in the U.S.: 2015

Prevalence of food insecurity in 2015

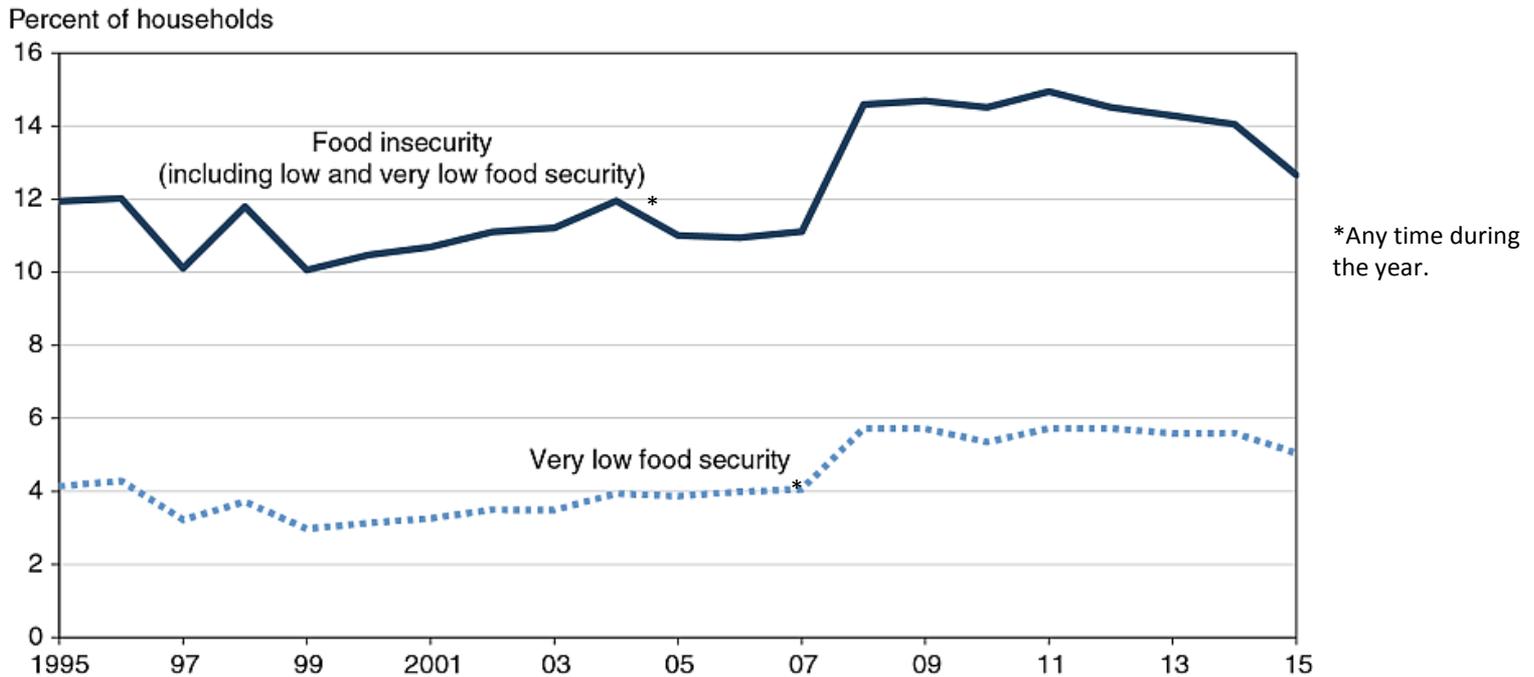


NA = Estimated average daily occurrence of food insecurity is not available because information was not collected on the number of days that less severe food-insecure conditions occurred.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2015 Current Population Survey Food Security Supplement.

Food Insecurity in the U.S.

Figure 3
Trends in the prevalence of food insecurity and very low food security in U.S. households, 1995-2015¹

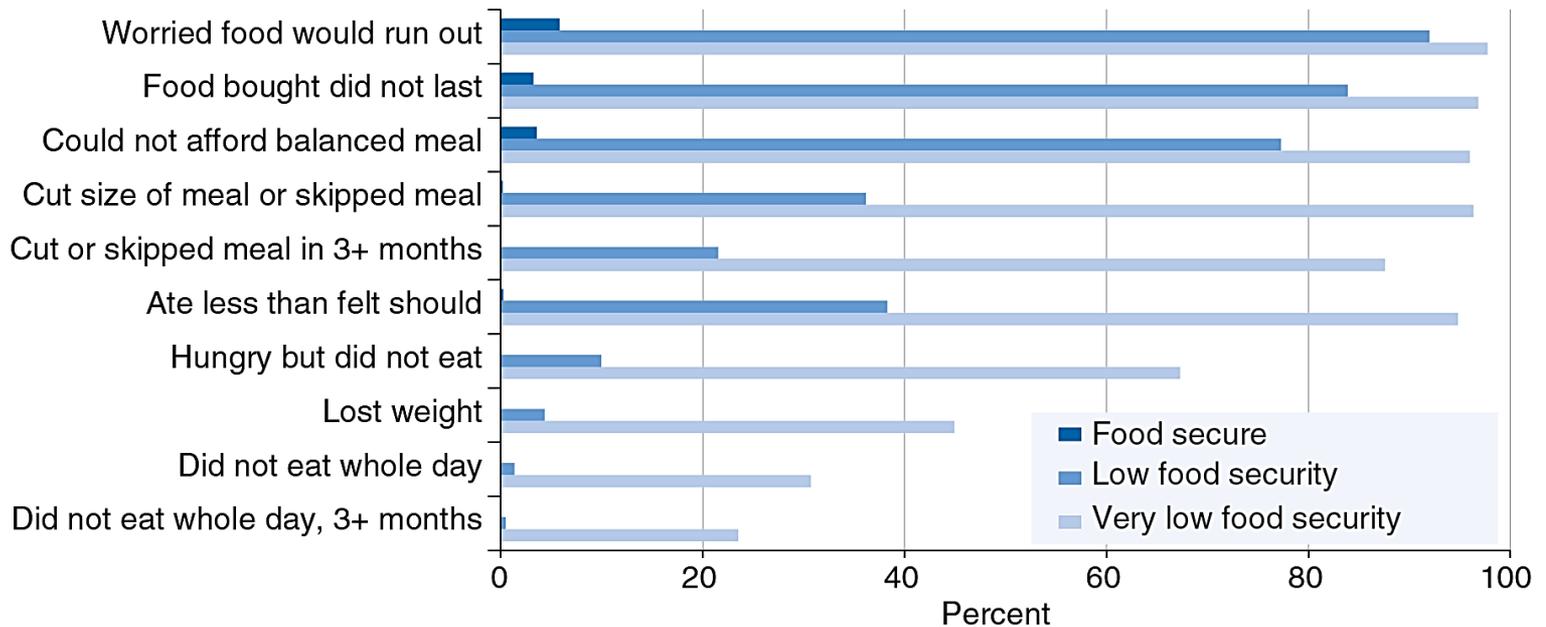


¹Prevalence rates for 1996 and 1997 were adjusted for the estimated effects of differences in data collection screening protocols used in those years.

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

Food Insecurity in the U.S.

Percentage of households reporting each indicator of food insecurity, by food security status, 2015

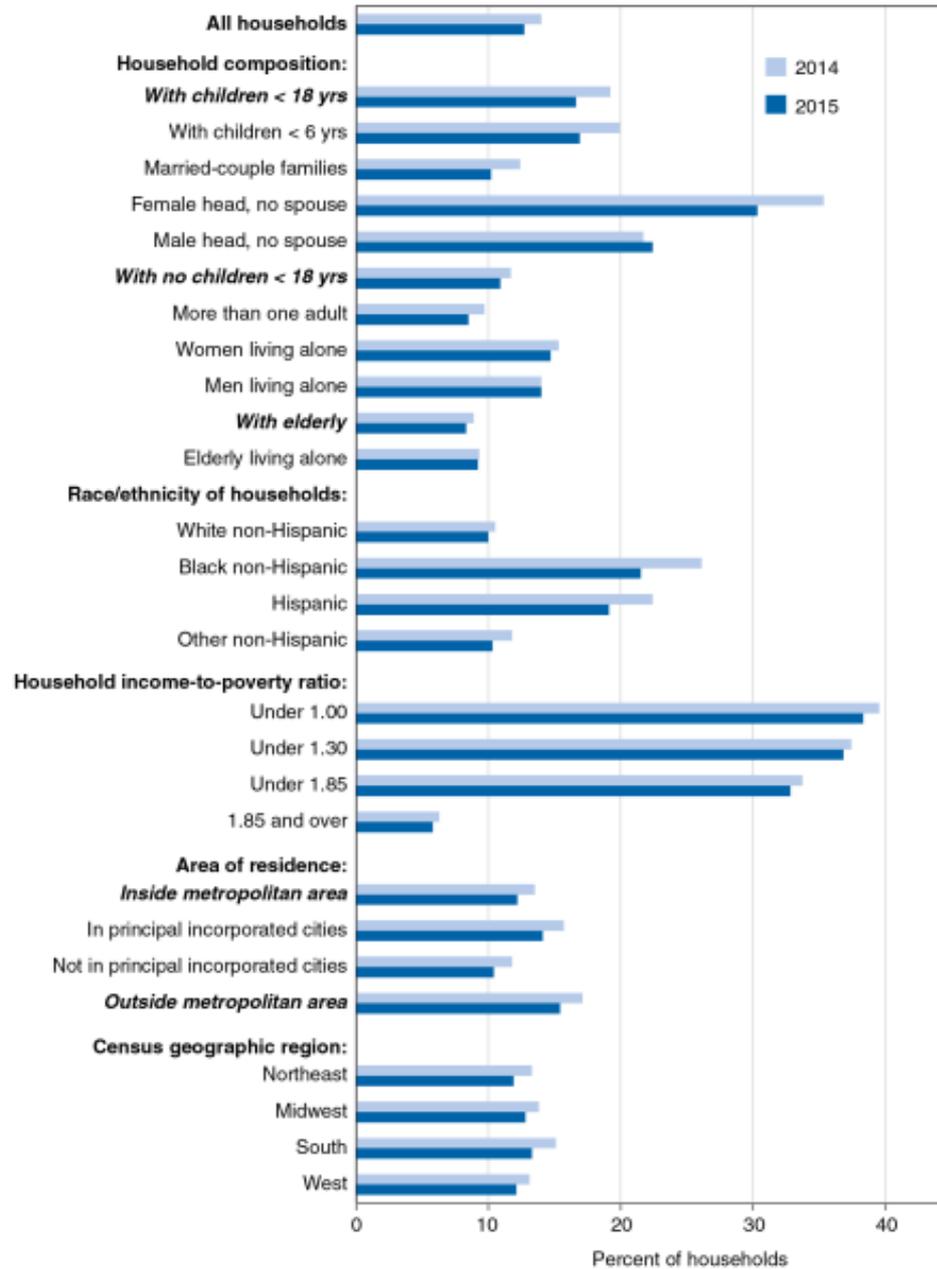


Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2015 Current Population Survey Food Security Supplement.



Food Insecurity Rates are Higher in Some Groups Than Others

Prevalence of food insecurity, 2014 and 2015



Coleman-Jensen A, Rabbitt MP, Gregory C, Singh A. Household food security in the United States in 2015 [Internet]. United States Department of Agriculture, Economic Research Service; 2016.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2014 and 2015 Current Population Survey Food Security Supplement.



FOOD INSECURITY RATES

4-14%

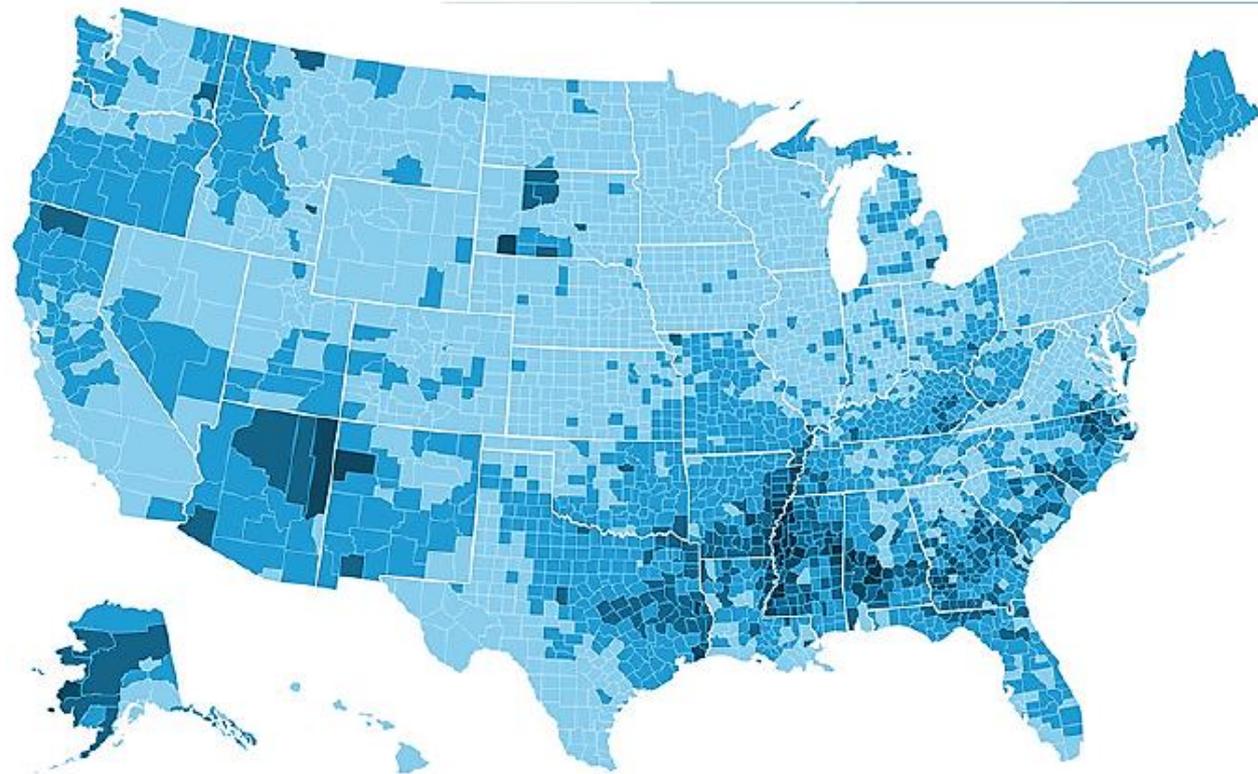
15-19%

20-24%

25-29%

30%+

Food Insecurity at the County Level



Food Insecurity and Hunger: From the Perspective of Those Who Experience It

- Witnesses to Hunger (5,6)
 - Started in 2008 in Philadelphia
 - Research and advocacy
 - Partnered with mothers and young children who experience hunger and poverty
 - Photographs and stories
- A Place at the Table (7)
 - 2012 documentary on hunger in the US
 - Website has resources for community screenings, social media tools, hunger resources and fact sheets

“Hunger: it’s right here in the United States. It could be right next door and you would never know because people are too afraid to talk about it.”

-Barbie Izquierdo

Barbie on the swings. Photo courtesy of Magnolia Pictures.



“Hunger: It’s right here in the United States. It could be right next door and you would never know because people are too afraid to talk about it.”

-Barbie Izquierdo

(5) Chilton M, Rabinowich J, Council C, Breaux J. Witnesses to hunger: participation through photovoice to ensure the right to food. Health and human rights. 2009;11(1):73-85.

(6) <http://www.centerforhungerfreecommunities.org/our-projects/witnesses-hunger>

(7) <http://www.takepart.com/place-at-the-table/>



Responses to Food Insecurity: SNAP

- SNAP = Supplemental Nutrition Assistance Program
 - Formerly called the Food Stamp Program
 - Provides eligible families with funds to purchase food
 - Aims: alleviate hunger and improve the nutrition and health of low-income people
 - Eligibility:
 - Most households with gross income less than 130 percent of the federal poverty level (FPL)
 - Other income, assets, and cost-of-living criteria also used
 - Households may also qualify if some or all members participate in TANF or SSI, or general assistance



Responses: SNAP in 2015

- Nearly 2/3 of participants are children, elderly, or had disabilities
- 44% of participants lived in households with earnings (e.g., had jobs)
- Average household income 59% of the poverty line

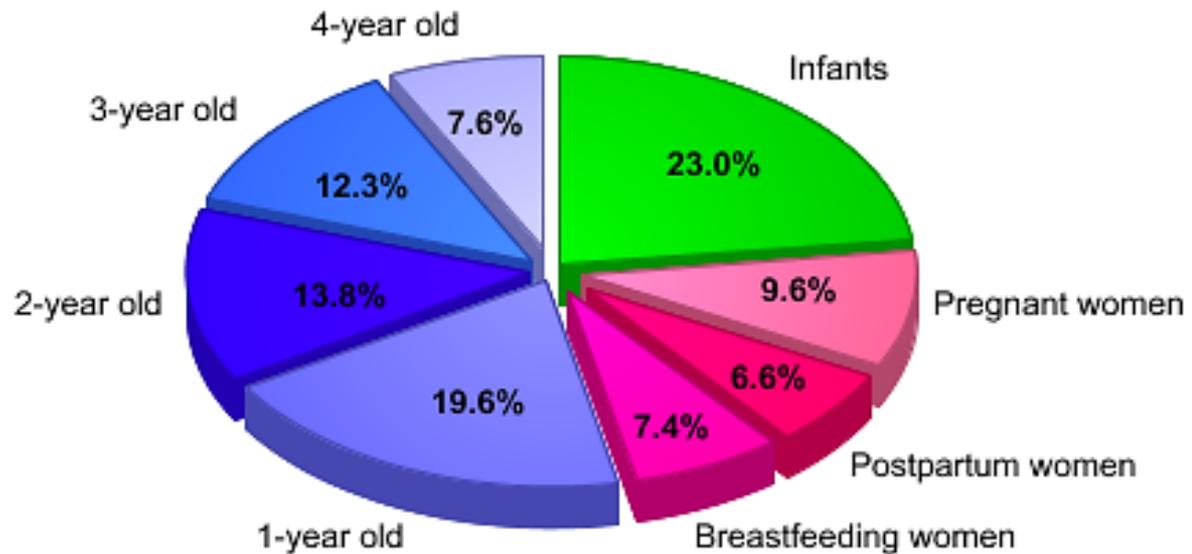


Responses to Food Insecurity: WIC

- WIC = Special Supplemental Nutrition Program for Women, Infants, and Children
 - Federal grants to states for providing supplemental, nutrient rich foods, health care referral, and nutrition education to:
 - Low-income pregnant, breastfeeding, and non-breastfeeding postpartum women
 - Infants and children up to age five found to be at nutritional risk
 - Most states also include vouchers through WIC's Farmers' Market Nutrition Program
 - Eligibility: households with income at or below 185 percent FPL with a child age 0-5 and a pregnant or postpartum woman

Children 1-4 years old account for over half of WIC participants, April 2014

**Responses:
WIC**



Source: Prepared by ERS, USDA, using April 2014 data from "WIC Participant and Program Characteristics: 2014 Final Report," USDA, Food and Nutrition Service (see Table II.3). Available at: <http://www.fns.usda.gov/sites/default/files/op/WIC2014.pdf>



Responses to Food Insecurity

- School Meals Program
 - National School Lunch Program, the School Breakfast Program, Fresh Fruit and Vegetable Program, Special Milk Program
- Summer Food Service Program
- Child and Adult Care Food Program
- Food distribution





Responses: Community-Based Food and Nutrition Assistance

- Types:
 - Food pantries, food banks, churches
 - Soup kitchens
- Sources of food:
 - Local resources
 - Supplemented by the USDA through The Emergency Food Assistance Program (TEFAP)
 - 2015: TEFAP supplied 864 million pounds of commodities to community emergency food providers





Responses: Nutritional Information

Program	Information	Web Site
WIC	WIC food packages	https://www.fns.usda.gov/wic/final-rule-revisions-wic-food-packages
	State agency WIC-approved food lists for food packages	https://www.fns.usda.gov/wic/links-state-agency-wic-approved-food-lists
SNAP	Eligible food items	https://www.fns.usda.gov/snap/eligible-food-items
	SNAP-Ed resources	https://snaped.fns.usda.gov/
National School Lunch and National School Breakfast Programs	Nutritional standards for school lunches and breakfasts	https://www.fns.usda.gov/school-meals/nutrition-standards-school-meals
Child and Adult Food Program	Meal patterns for infants, children, and adults	https://www.fns.usda.gov/cacfp/meals-and-snacks
Summer Food Service Program	Finding summer meal programs in the community and meal content	https://www.fns.usda.gov/sfsp/summer-food-service-program



Innovative Responses

- Incentives for SNAP participants to purchase healthy items (8)
- Food “prescription” programs

(8) Gordon, E, Dawkins-Lyn, N, Hogan-Yarbro, R, Karpyn, A, Weiss, S, Cash, S. Approaches for promoting healthy food purchases by SNAP participants [Internet]. United States

Department of Agriculture, Food and Nutrition Service, Office of Policy Support; 2014.

Available from: <https://fns-prod.azureedge.net/sites/default/files/ICF-IHC-Final-Report-0714.pdf>.



Knowledge Check

Food insecurity in individuals with diabetes has been associated with:

- a) hyperglycemia
- b) hypoglycemic episodes
- c) both
- d) none



Food insecurity in individuals with diabetes has been associated with:





Food Insecurity and Diet

- Energy-dense foods (refined grains, added sugars, fats) cheaper than nutrient-dense foods
- Lower quality diets are less expensive in general (9,10)
- Food insecurity associated with lower-quality diets, lower produce intake, and fewer healthy eating habits (11,12)

(9) Darmon N, Drewnowski A. Contribution of food prices and diet cost to socioeconomic disparities in diet quality and health: a systematic review and analysis. *Nutrition reviews*. 2015 Oct;73(10):643-60.

(10) Drewnowski A. The cost of US foods as related to their nutritive value. *Am J Clin Nutr*. 2010 Nov;92(5):1181-8.

(11) Berkowitz SA, Gao X, Tucker KL. Food-Insecure Dietary Patterns Are Associated With Poor Longitudinal Glycemic Control in Diabetes: Results From the Boston Puerto Rican Health Study. *Diabetes Care*. 2014;37(9):2587-92.

(12) Morales ME, Berkowitz SA. The Relationship Between Food Insecurity, Dietary Patterns, and Obesity. *Current Nutrition Reports*. 2016;5(1):54-60.



Food Insecurity and Diabetes

- Associated with diabetes (13)
- Among those with diabetes, association between food insecurity and:
 - Higher risk of poor glucose control, hyperglycemia (14,15)
 - More hypoglycemic episodes (16)

(13) Seligman HK, Bindman AB, Vittinghoff E, Kanaya AM, Kushel MB. Food insecurity is associated with diabetes mellitus: results from the National Health Examination and Nutrition Examination Survey (NHANES) 1999-2002. *J Gen Intern Med.* 2007;22(7):1018-23.

(14) Seligman HK, Jacobs EA, Lopez A, Tschann J, Fernandez A. Food insecurity and glycemic control among low-income patients with type 2 diabetes. *Diabetes Care.* 2012;35(2):233-8.

(15) Mayer VL, McDonough K, Seligman H, Mitra N, Long JA. Food insecurity, coping strategies and glucose control in low-income patients with diabetes. *Public health nutrition.* 2015:1-9. Epub 2015/09/04.

(16) Seligman HK, Jacobs EA, Lopez A, Sarkar U, Tschann J, Fernandez A. Food insecurity and hypoglycemia among safety net patients with diabetes. *Archives of internal medicine.* 2011;171(13):1204-6.



Screening for Food Insecurity in Health Systems

- Recommended by the American Academy of Pediatrics (AAP) (17)
- Recommendation from the American Diabetes Association (ADA) (18)
- Increasing focus on population health
 - Health systems/policy interest in addressing social determinants as a way to improve outcomes and reduce costs
- Multiple health institutions across the country instituting various screening measures



AAP Policy Recommendations for Pediatricians: November 2015

- 2-Question screening tool (19)
- Familiarize yourself with referral mechanisms
- Awareness of nutritional content of food offered in supplemental programs
- Awareness of associated vulnerabilities and risks with food-insecure households
- Educate medical students and residents
- Advocacy: Promote access/funding of programs (WIC, SNAP)
- Research to optimize access to high-quality, nutritious food



2-Question Screen Recommended by AAP

- Within the past 12 mos, I/we worried whether my/our food would run out before I/we got money to buy more. (Yes or No)
- Within the past 12 mos, the food I/we bought just didn't last and I/we didn't have money to get more. (Yes or No)



ADA Standards of Medical Care for Diabetes – 2017 - “Tailoring Treatment to Reduce Disparities”

- “Providers should assess social context, including potential food insecurity, housing stability, and financial barriers, and apply that information to treatment decisions.”
- “Patients should be referred to local community resources when available.”
- “Providers should recognize that FI complicates diabetes management and seek local resources that can help patients and the parents of patients with diabetes to more regularly obtain nutritious food.”
- Consider risks of hypoglycemia in medication decisions



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Finding Resources Near You



USDA National Hunger Clearinghouse Database of
Emergency Food Site:

<https://nhc.fns.usda.gov/nhc/national-hunger-organizations>



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Finding Resources Near You



Hablamos español



Need help

finding healthy, free food in your community?

The WhyHunger Hotline helps those in need find local healthy food resources. Call between 9am-6pm, Monday through Friday, to speak with an advocate.



Call the WhyHunger Hotline **1 800 5HUNGRY** (1 800 548 6479)



Text your zip code to **1 800 548 6479**



Search online at whyhunger.org/findfood



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Thank You!



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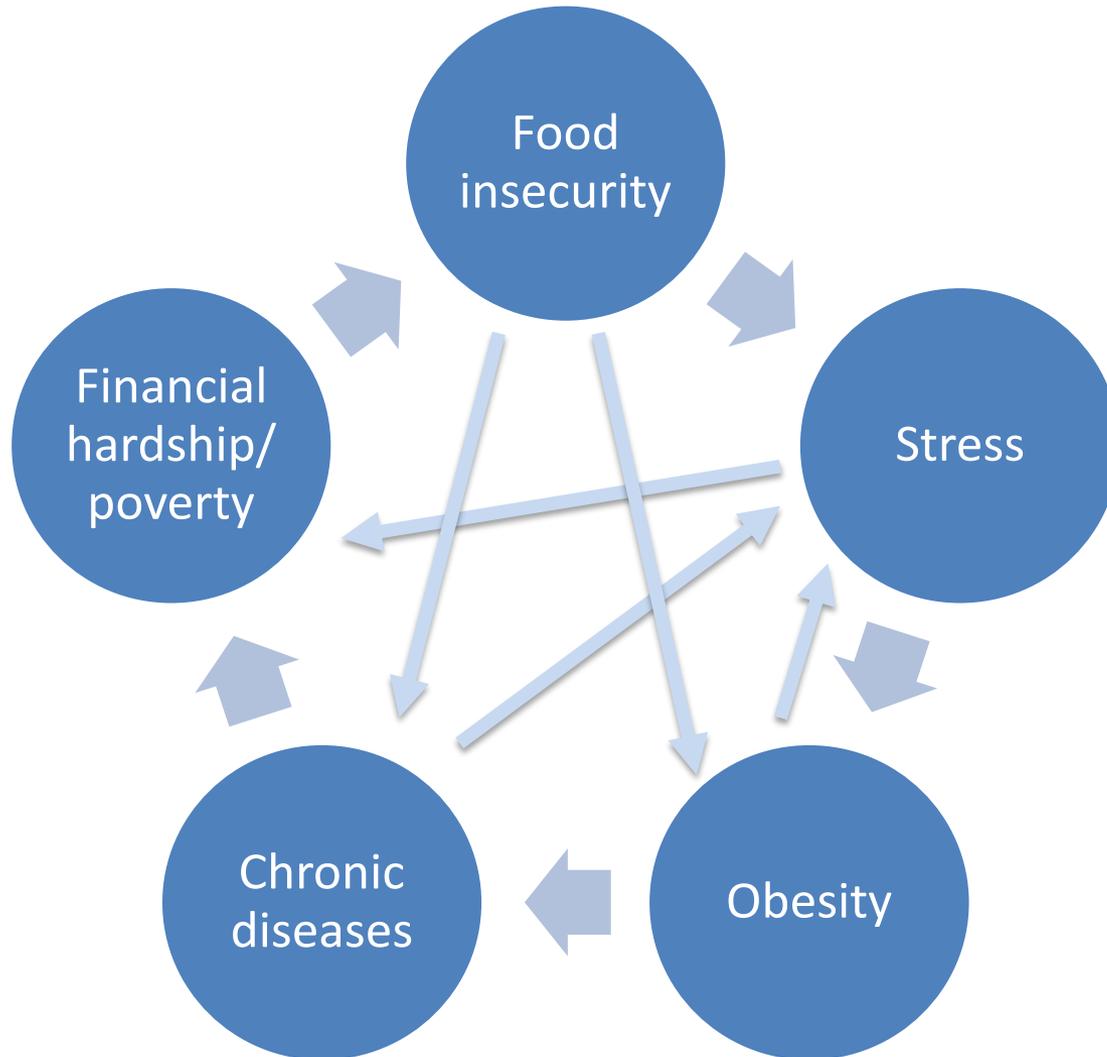
Monideepa Bhattacharya Becerra, DrPH, MPH, CHES

RELATIONSHIP BETWEEN FOOD INSECURITY AND HEALTH OUTCOMES



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Chronic Diseases

- Persistent, lasts 3 or more months
- Cannot be prevented through vaccination
- Cannot be cured by medication
- Do not disappear
- 88% of Americans 65 years or older have at least one
- Often attributable to lifestyle habits, including **dietary behavior**



Knowledge Check

Food insecurity is related to which of the following?

- Increased mental illness
- Decreased BMI
- Increased healthy dietary behaviors
- None of the above



Food insecurity is related to which of the following?





Food Insecurity and Diet

- Food insecure adults are less likely to:
 - Eat vegetables, especially females
 - Have fat avoidance behavior (replace high fat diet, avoid fat in restaurant food, etc.)
- Food insecurity has been associated with 24% and 142% higher average consumption of fast foods and soda, respectively, and 24% lower fruit intake among U.S. veterans (in California).

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3005628/>

<https://www.ncbi.nlm.nih.gov/pubmed/8841164>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3005628/>



Food Insecurity and Obesity

- In a 12-state study of 66,553 adults, food insecurity was related to 32% higher likelihood of being obese.
- In 810 pregnant women in North Carolina, food insecurity was related to being severely obese before pregnancy and with greater weight gain during pregnancy.
- Longitudinal study: food insecurity related to higher BMI among 2,400 patients.



Why Obesity? *Not Just Diet*

- Food shortage can lead to stress.
- Stress results in biological changes, such as visceral fat accumulation, cortisol release, and metabolic syndrome, leading to **obesity**.
- Obesity is associated with multiple chronic diseases.



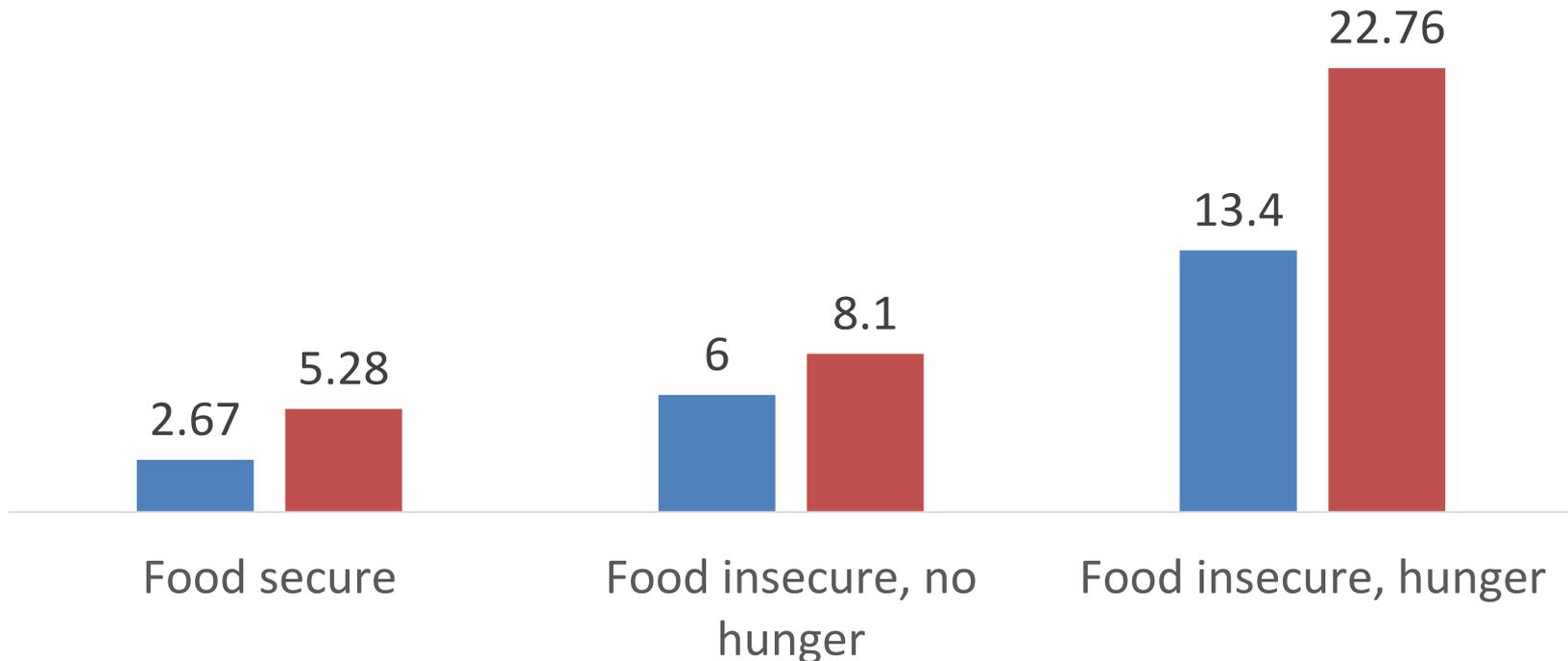


Food Insecurity and Chronic Diseases

- NHANES: increased likelihood of hypertension (20%), hyperlipidemia (30%), and lab/exam confirmed diabetes (48%) among food insecure participants.
- NHANES: Food insecurity related to chronic kidney disease.
 - High = 20.3%, marginal = 17.6%, no = 15.7%
- Food-insecure children are at least 2X as likely to report being in fair or poor health and 1.4 x as likely to have asthma.

Prevalence (%) of Serious Psychological Distress Among Low Income Hispanics and African-Americans in California

■ Hispanics ■ African-Americans



Food Insecurity and Diabetes

- Systematic review of North American studies: 1999-2004 **diabetes** rate in U.S. was 10.2% in food insecure households, compared to 7.4% in food secure households.

Diabetes rate

Mild food
insecurity



10%

16.1%



Severe food
insecurity



Food Insecurity and Diabetes

- Longitudinal survey in US: 50% higher risk of diabetes among food-insecure adults.
- Food- insecure adults are 2-3x more likely to have diabetes than other adults, even after controlling for risk factors such as income, employment status, physical measures, and lifestyle factors.
- More food-insecure pregnant women are at risk for gestational diabetes.



Burden on Health Care Cost

- NHIS: dose-dependent relationship between food insecurity level and medication underuse.
 - Higher among ethnic minorities and those with multiple chronic diseases.
- NHIS: 1 in 6 patients with diabetes report food insecurity.
 - Related to reducing, delaying, or avoiding medication use due to financial hardship.
- One-third of diabetics [people with diabetes] visiting food banks/kitchens pay for medication before food

<http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2015.302712>

<http://www.sciencedirect.com/science/article/pii/S0002934314000308>

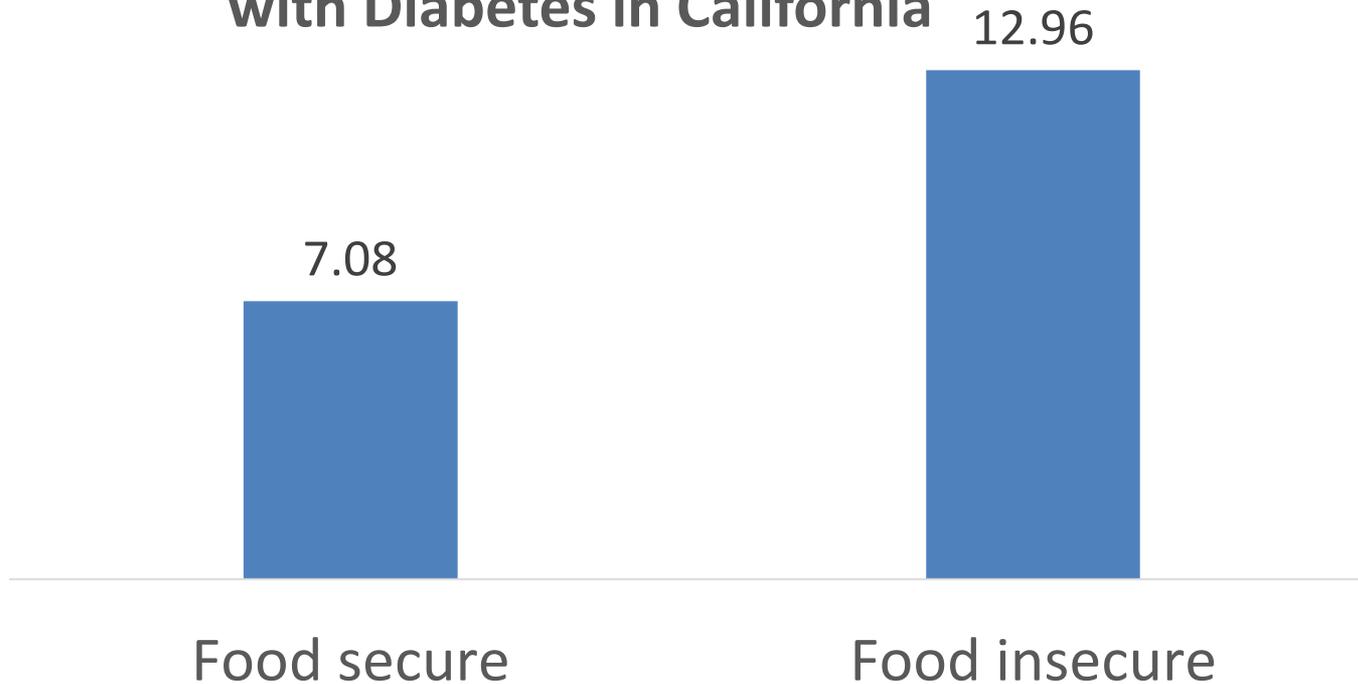
<http://www.sciencedirect.com/science/article/pii/S0091743515003679>

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4218969/pdf/13668_2014_Article_104.pdf



Food insecurity and Health Care Utilization-Diabetes

Emergency Department Use among Persons with Diabetes in California



Source:

<https://secure.jbs.elsevierhealth.com/action/getSharedSiteSession?rc=1&redirect=http%3A%2F%2Fwww.jdejournal.com%2Fretrieve%2Fpii%2FS1056872716302884&code=jdc-site>



Limitations and Strengths

- Majority of studies are cross-sectional
 - Limits causal inference
- Measure of food insecurity is not consistent throughout literature
- Empirical evidence consistently demonstrates the negative burden of food insecurity (among adults and children)

Implications

- Programs such as SNAP help alleviate burden
- Hispanics are 4x less likely to participate in SNAP than non-Hispanic Whites, even if eligible
 - Lack of knowledge
 - Transportation
 - Stigma
 - Health care costs
- *Promotores* can provide community-based resources





Gary Ferguson, BS, ND

BRIGHT SPOTS IN ADDRESSING NUTRITION INSECURITY AMONG AMERICA'S INDIGENOUS POPULATION



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YouTube Search

Dr. Gary Ferguson

1:06 / 5:09

Badarki Salad :: Traditional Foods, Contemporary Chef :: Aleutians

ANTHCStoreOutside

Subscribe 606

2,277 views

The video player interface includes a search bar at the top with the YouTube logo and a search icon. The video content shows two men in dark, heavy outdoor clothing and hats, kneeling on a rocky shore next to a body of water. One man is holding a small object, possibly a sample, while the other looks on. The video player controls at the bottom show a play button, a progress bar at 1:06 / 5:09, and various icons for closed captions, settings, and full screen. Below the video, the title "Badarki Salad :: Traditional Foods, Contemporary Chef :: Aleutians" is displayed, followed by the channel name "ANTHCStoreOutside" and a "Subscribe" button with a subscriber count of 606. The view count "2,277 views" is shown in the bottom right corner.

www.youtube.com/anthcstoreoutside



1933 Dr. Weston Price Travelled to Remote Alaskan Villages in the YK Delta

- “...examples of physical excellence and dental perfection such as has seldom been excelled by any race in the past or present.”
- “...strong rugged babies”



1st Generation of Children Born After Adoption of ‘Store Grub’

- Dental arch deformities
- Crooked Teeth
- Changed facial form

“We have few problems more urgent or more challenging than reversing these trends.”

Weston A. Price, 1939



Helping Ourselves to Health:

Addressing Factors that Contribute to Obesity Among Alaska Native People

Tim Gilbert, MPH

Desiree Bergeron RD, LD

Gary Ferguson BS, ND

This research was supported by the National Research Initiative of the USDA National Institute of Food and Agriculture, Grant #2007-55215-17923



Dietary Patterns and Nutritional Adequacy - Rural Yup'ik Women in Western Alaska

- The majority of women (90-100%) fell below the recommendations for dietary fiber, vitamin D, vitamin E and calcium. More than 50% of women fell below the recommendations for vitamin A and more than one-third were below for zinc, and vitamins C and B-6
- Store-bought foods, such as juices/pop and coffee, were the most frequently reported food items. Sweetened beverages and pop were the main contributors to energy, carbohydrate and sugar intake
- Traditional foods provided 34% of protein, 27% of iron, 23% of vitamin A, 21% of zinc, 6% of carbohydrate intake and <5% of total energy intake



Knowledge Check

Currently, what percentage of Alaska's food is imported?

- 25%
- 50%
- 70%
- 95%



Currently, what percentage of Alaska's food is imported?



First View

Get access

Declines in traditional marine food intake and vitamin D levels from the 1960s to present in young Alaska Native women

Diane M O'Brien (a1) (a2), Kenneth E Thummel (a3), Lisa R Bulkow (a4), Zhican Wang (a3) ... 

DOI: <https://doi.org/10.1017/S1368980016001853> Published online: 28 July 2016

Abstract

To measure the trends in traditional marine food intake and serum vitamin D levels in Alaska Native women of childbearing age (20–29 years old) from the 1960s to the present. We measured a biomarker of traditional food intake, the $\delta^{15}\text{N}$ value, and vitamin D level, as 25-hydroxycholecalciferol (25(OH)D₃) concentration, in 100 serum samples from 20–29-year-old women archived in the Alaska Area Specimen Bank, selecting twenty-five per decade from the 1960s to the 1990s. We compared these with measurements of red-blood-cell $\delta^{15}\text{N}$ values and serum 25(OH)D₃ concentrations from 20–29-year-old women from the same region collected during the 2000s and 2010s in a Center for Alaska Native Health Research study. The Yukon Kuskokwim Delta region of south-west Alaska. Alaska Native women (n 319) aged 20–29 years at the time of specimen collection. Intake of traditional marine foods, as measured by serum $\delta^{15}\text{N}$ values, decreased significantly each decade from the 1960s through the 1990s, then remained constant from the 1990s through the present ($F_{5,306}=77.4, P<0.0001$). Serum vitamin D concentrations also decreased from the 1960s to the present ($F_{4,162}=26.1, P<0.0001$). Consumption of traditional marine foods by young Alaska Native women dropped significantly between the 1960s and the 1990s and was associated with a significant decline in serum vitamin D concentrations. Studies are needed to evaluate the promotion of traditional marine foods and routine vitamin D supplementation during pregnancy for this population.

Export citation

Request permission

Aa Aa



Keywords:

Nutrition transition

Rickets

25-Hydroxycholecalciferol concentration

$\delta^{15}\text{N}$ value

Stable isotope ratios

Arctic health

Circumpolar health

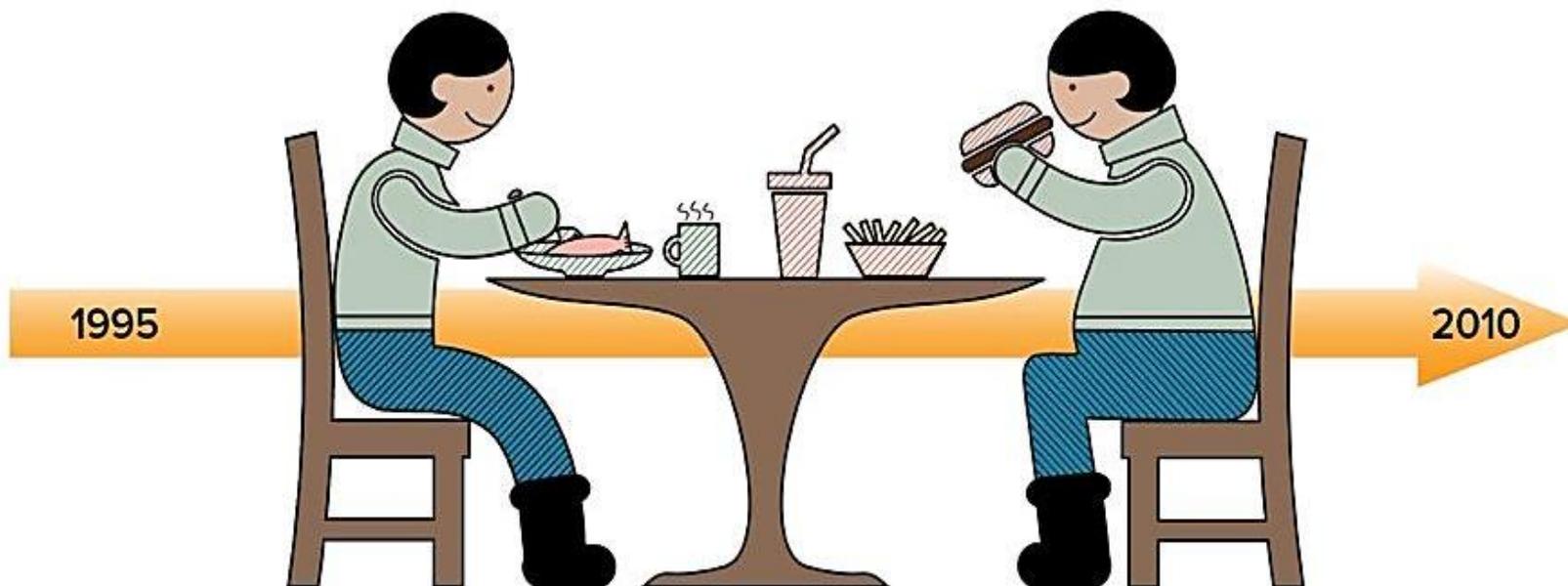
O'Brien, D.M., Thummel, K.E., Bulkow, L.R., Wang, Z., Corbin, B., Klejka, J., Hopkins, S.E., Boyer, B.B., Hennessy, T.W. and Singleton, R. (2016) 'Declines in traditional marine food intake and vitamin D levels from the 1960s to present in young Alaska Native women', *Public Health Nutrition*, , pp. 1–8. doi: 10.1017/S1368980016001853.



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136% increase in diabetes in Alaska Native people.⁽²⁾





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Congenital Sucrase-isomaltase Deficiency (CSID)

Researchers identify cause of gastrointestinal disorder affecting Inuit

ANDRÉ PICARD - PUBLIC HEALTH REPORTER
THE GLOBE AND MAIL

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<http://www.theglobeandmail.com/news/national/researchers-identify-cause-of-gastrointestinal-disorder-affecting-inuit/article21845977/>



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Photo Credit: American Renaissance



Lower Prevalence of Impaired Glucose Tolerance and Diabetes Associated With Daily Seal Oil or Salmon Consumption among Alaska Natives

1. Amanda I Adler, MD, PHD,
2. Edward J Boyko, MD, MPH,
3. Cynthia D Schraer, MD and
4. Neil J Murphy, MD

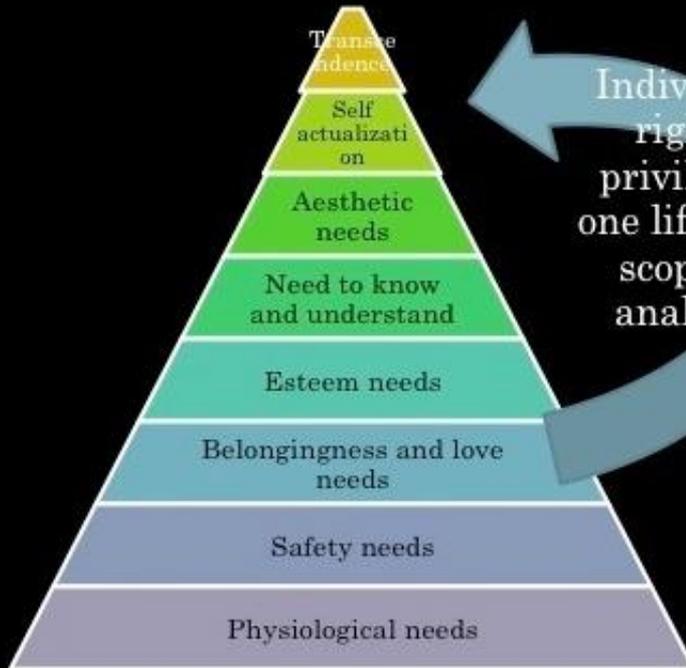


“Let foods be your medicine” -Hippocrates

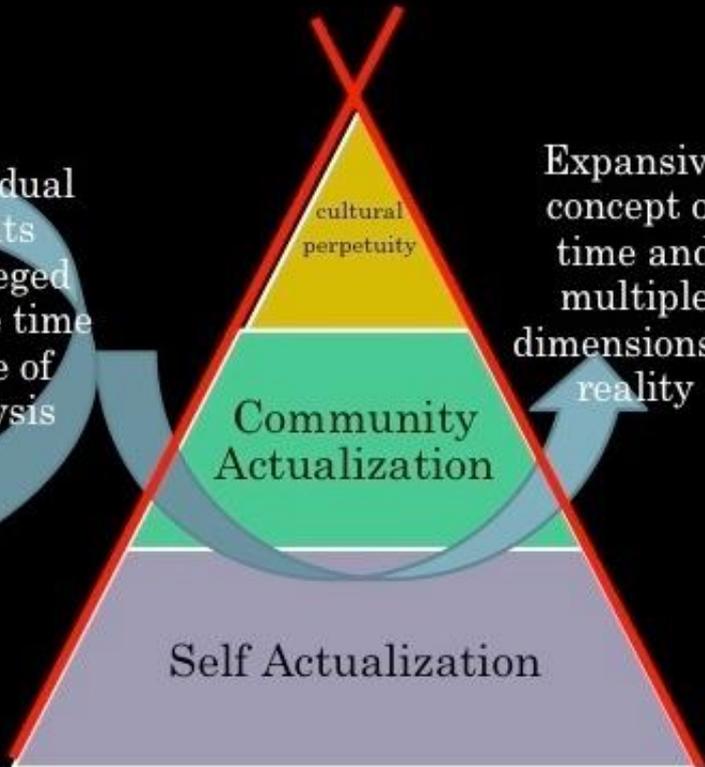


MASLOW'S HIERARCHY OF NEEDS (INFORMED BY BLACKFOOT NATION (ALTA))

Western Perspective



First Nations Perspective



Individual rights privileged one life time scope of analysis

Expansive concept of time and multiple dimensions of reality



	SUBSISTENCE
14-1	A RESOLUTION SUPPORTING PROTECTIONS, INCLUDING A COMMUNITY FISHING ASSOCIATION, FOR GULF OF ALASKA FISHERY DEPENDANT COASTAL COMMUNITIES FROM THE NORTH PACIFIC FISHERIES MANAGEMENT COUNCIL AS THE COUNCIL DEVELOPES THE GULF OF ALASKA TRAWL GROUND FISH BYCATCH MANAGEMENT PROGRAM (RATIONALIZATION PROGRAM)
14-2	CALL FOR ALASKA NATIVE SELF-DETERMINATION IN THE MANAGEMENT OF THEIR HUNTING, FISHING, TRAPPING, AND GATHERING RIGHTS AND RESOURCES



2014 AFN Convention Resolutions

14-6	TO SUPPORT THE SWIFT ENACTMENT OF REGULATIONS GOVERNING THE PROCEDURES FOR THE FEDERAL SUBSISTENCE BOARD TO DETERMINE RURAL/TRIBAL COMMUNITY STATUS UNDER TITLE VIII OF THE ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT
14-41	SUBSISTENCE RIGHTS PRIORITY OVER COMMERCIAL AND SPORTS USES FOR FISH AND GAME
14-42	PROTECTION OF ALASKA NATIVE TRADITIONAL RESOURCE MANAGEMENT PRACTICES
14-43	RE-ESTABLISH INDIGENOUS SUBSISTENCE RIGHTS IN ALASKA



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ELECTRONIC ARTICLE

Prenatal and Postnatal Flavor Learning by Human Infants

Julie A. Mennella, PhD, Coren P. Jagnow, MS, Gary K. Beauchamp, PhD

+ Author Affiliations

ABSTRACT

Background. Flavors from the mother's diet during pregnancy are transmitted to amniotic fluid and swallowed by the fetus. Consequently, the types of food eaten by women during pregnancy and, hence, the flavor principles of their culture may be experienced by the infants before their first exposure to solid foods. Some of these same flavors will later be experienced by infants in breast milk, a liquid that, like amniotic fluid, comprises flavors that directly reflect the foods, spices, and beverages eaten by the mother. The present study tested the hypothesis that experience with a flavor in amniotic fluid or breast milk modifies the infants' acceptance and enjoyment of similarly flavored foods at weaning.

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(doi: 10.1542/peds.107.6.e88)

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Traditional Foods Infant Feeding



Patti Kanayurak and her boy Connor (Barrow, Alaska). Photo used with permission.



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Traditional Food Guide

FOR ALASKA NATIVE
CANCER SURVIVORS



Alaska Native Tribal Health Consortium
Cancer Program



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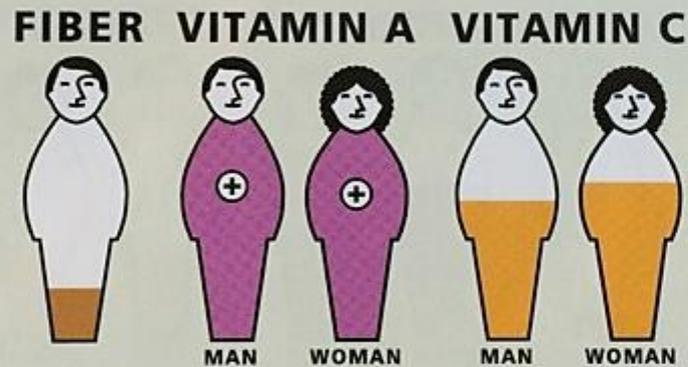
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FIREWEED NUTRITION INFORMATION

Fireweed is an excellent source of Vitamins A & C, and a good source of fiber



HEART FRIENDLY

- Fat free
- Very low in sodium

NUTRITION INFORMATION

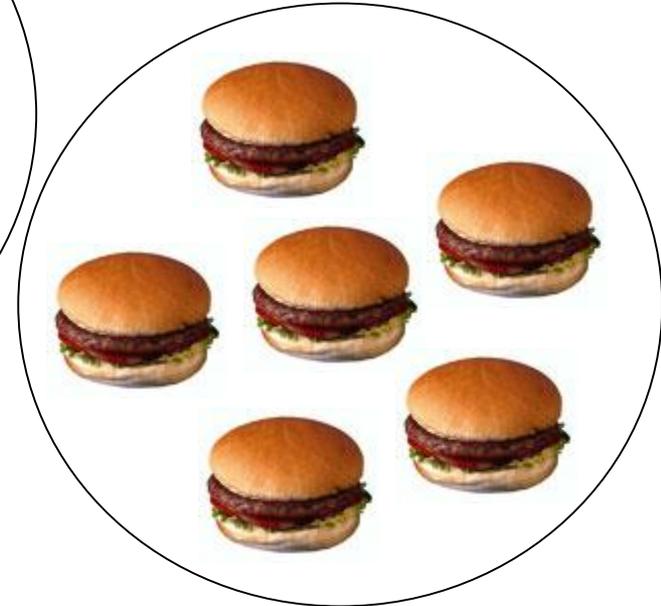
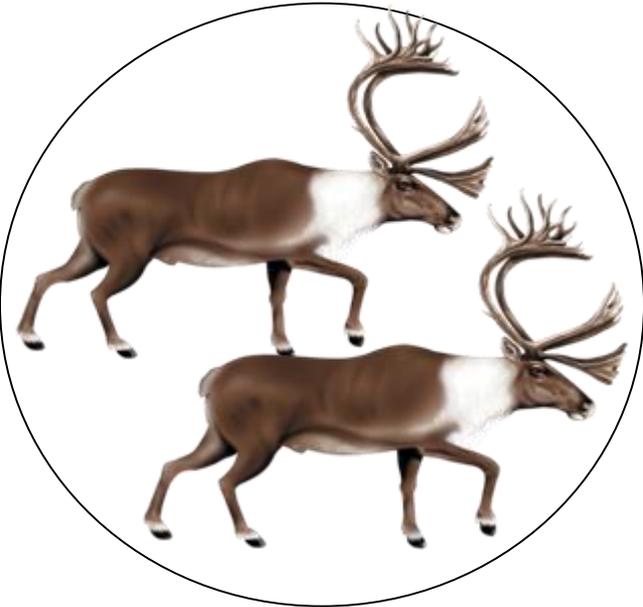
Per serving - 1 cup: raw

Calories	24
Protein	2 g
Carbohydrate	3 g
Fat	0
Calories from fat	0 %
Saturated fat	NT*
Dietary Fiber	3 g
Cholesterol	NT*
Sodium	28 mg
Vitamin A	3146 IU
Vitamin C	55 mg
Iron	1 mg

*Not Tested



Iron



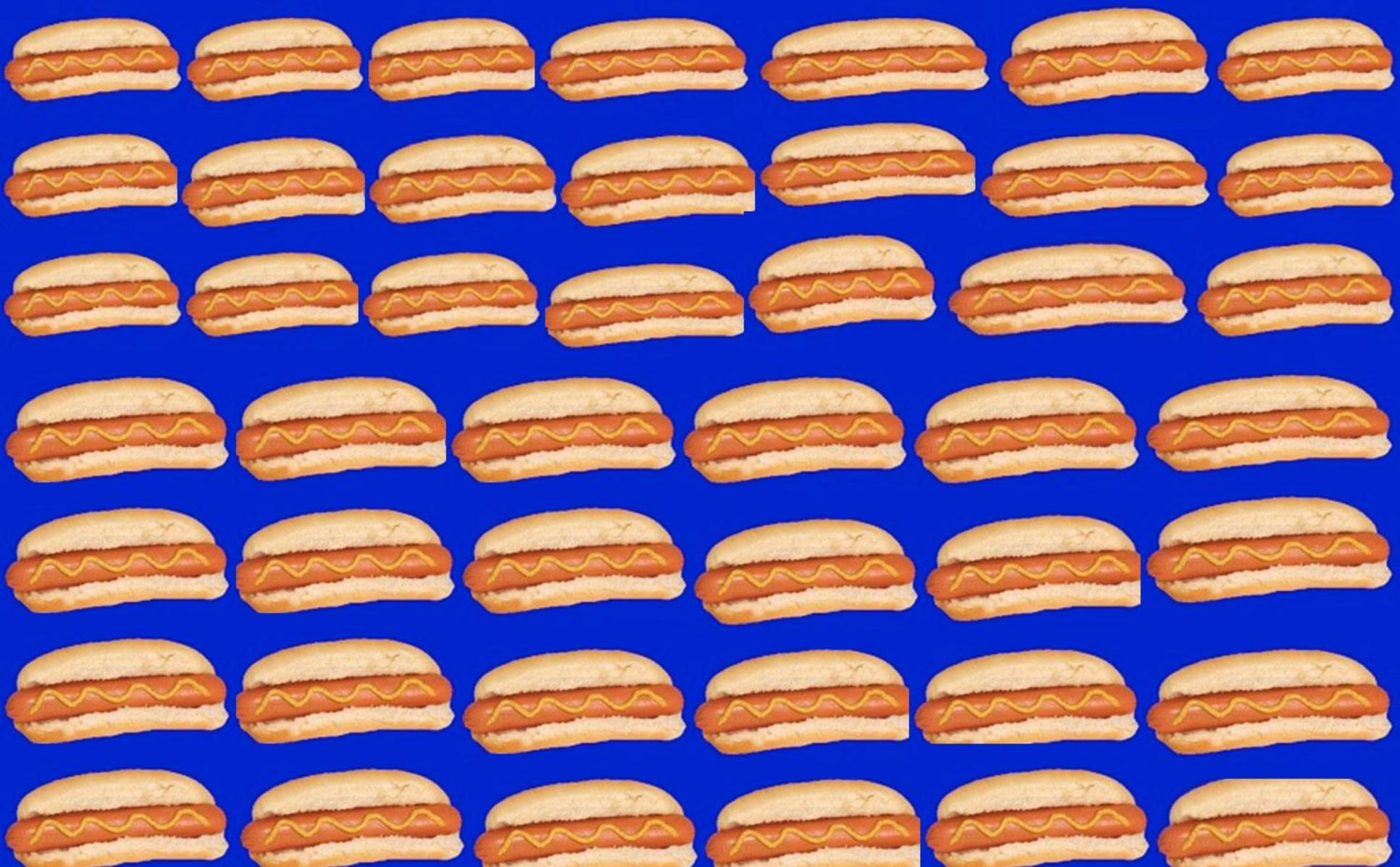
How many hotdogs?

Country food is good for you and your family



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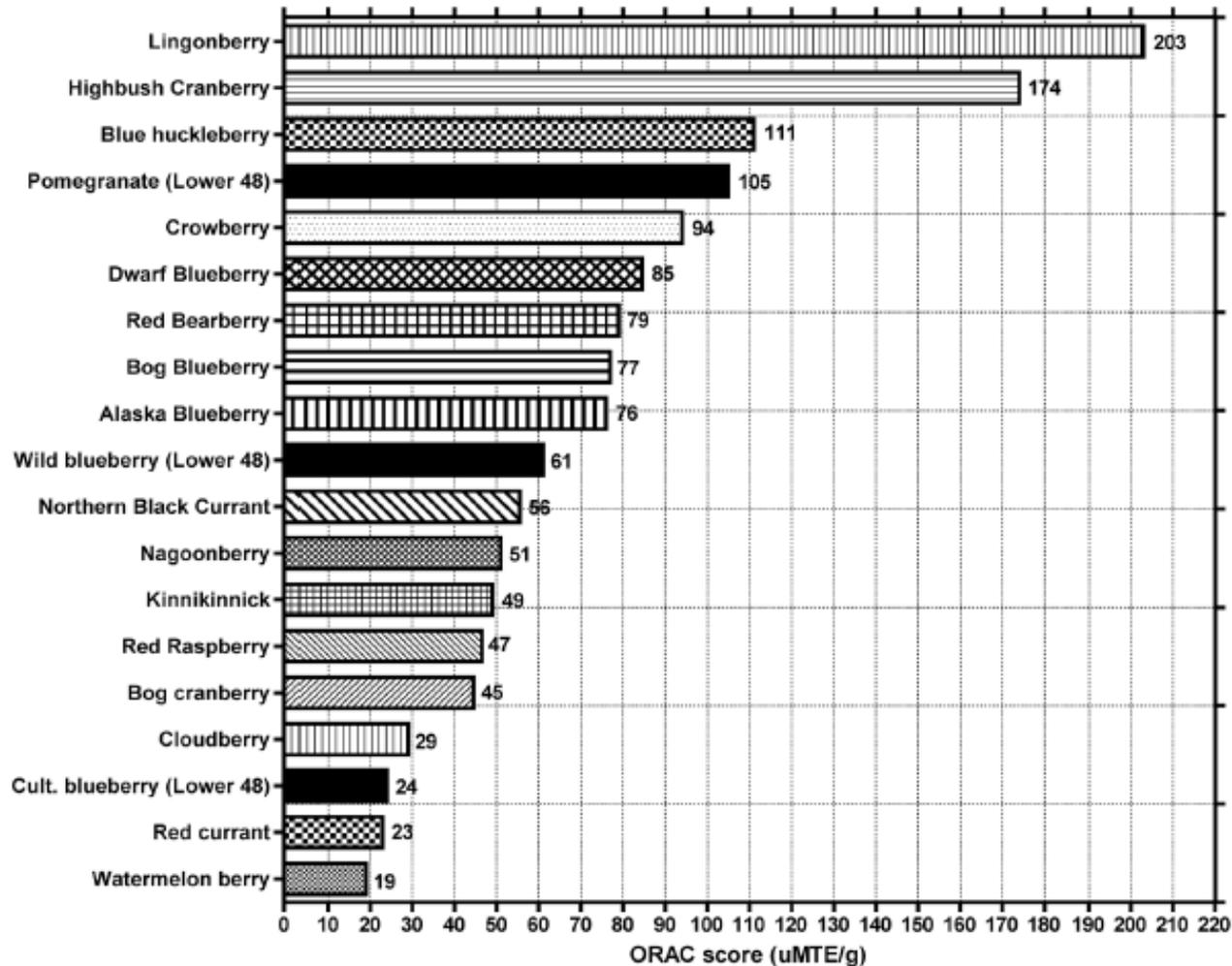
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Comparison of Berries





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PLANTS THAT WE EAT



*Nauriat
Nigiñaqtuat*



From the traditional
wisdom of the
Iñupiat Elders of
Northwest Alaska



Anore Jones





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Decolonizing Healthcare



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PART IV

TRADITIONAL FOODS IN NATIVE AMERICA

A compendium of traditional foods stories
from American Indian and Alaska Native communities





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Traditional Foods Programs and Map

Traditional Foods Partners





TRADITIONAL FOODS PROGRAM

[Overview](#)

[Nutrition Fact Labels](#)

[Nutrient Graphics](#)

[Glossary](#)

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The goal of the Traditional Foods Program is to promote the use of traditional foods as part of a healthy diet and for overall well-being.

The Unangan (E)/ Unangas (A) historically depended on foods from the sea; seal, sea lion, whale, fish and tidal foods provided the majority of nutrients in the diet. Birds, plants, caribou, and later reindeer in some communities, were also important sources of food. All of these foods continue to be used today and are supplemented with store-bought foods.

Traditional foods must be celebrated. Traditional foods, harvested from the land and sea, are an essential part of our lives and culture and have been for thousands of years. Many traditional values are expressed through the harvesting and preparation of local food: the importance of sharing, respect for elders, helping and taking care of others, not being greedy, and taking care of the land, air and water, to name a few.

Traditional foods provide nutritional, health, sociocultural, spiritual, and economic benefits to individuals and communities of the Aleutian and Pribilof islands. The harvesting, preservation and preparation of traditional foods have been a vital part of Unangan (E)/ Unangas (A) life from time immemorial.

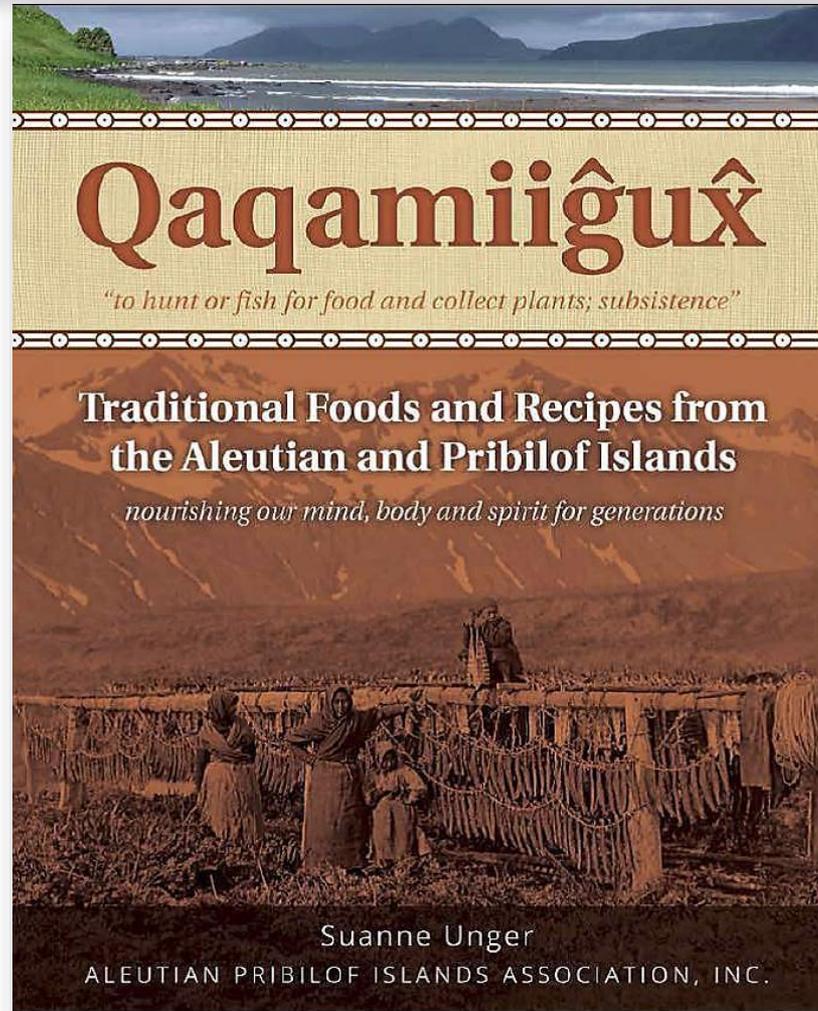
Tribal Services

- Community Development
- Energy
- Environmental Programs
- Traditional Foods Program**
 - Overview
 - Nutrition Fact Labels
 - Nutrient Graphics
 - Glossary
 - Videos & Audio
 - Resources/ Links
- Public Safety
- Self Governance
- Links



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<http://www.apiai.org/product/traditional-foods-recipes>



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Food Is Our Medicine
HEALTHY FIRST NATIONS

Home Farmers Market Elders' Sharing Circle Healthy Food Initiative » Native Plants » Activities & Events » About the Project »

Native Plants

Upcoming Events Workshops Native Plants Support the Project

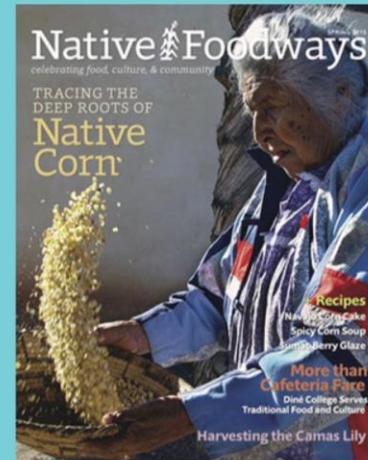
<http://www.foodisourmedicine.org>

Issue Three is now available:

Order Now!

Native Foodways Magazine...

- ✦ Tells the stories of Native farmers & gardeners... fishers & hunters... foragers & wildcrafters... chefs & home cooks.
- ✦ Shares the inspiring community efforts to preserve traditional foods & vibrant cultural food traditions.
- ✦ Explores beautiful artistic expression related to food.
- ✦ Provides recipes and resources for cooking healthy & tasty meals.
- ✦ Documents the impact of national & global food policies on Native communities.
- ✦ Showcases the fiction & poetry of food as a cultural expression.
- ✦ Promotes Native food sovereignty.



Premiere Issue

Issue #2



<http://www.nativefoodways.org>



October 27, 2014 
eoconnell 

The Muckleshoot Tribe is spreading traditional food through schools

Categories: Lead Story, News

The Muckleshoot Indian Tribe is making sure traditional foods are part of many of the meals it serves. Six kitchens across the tribe – including in schools and elder facilities – adopted new protocols to encourage the use of traditional foods.

The Muckleshoot Indian School is using the protocols to designate at least one day a week for traditional foods. The introduction of traditional food has been a learning process for both the kitchen staff at the school and the school community, said Shawn Saylor, the school kitchen coordinator.

The Muckleshoot school kitchen began introducing traditional foods soon after the protocols were in place four years ago.



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Treaty Rights at Risk

Tribes and agencies looking for more technical information, please visit access.nwifc.org.

Receive News by Email

Sign up to get Northwest Treaty Tribes News sent to your email.

Name

<http://nwifc.org/muckleshoot-tribe-spreading-traditional-food-schools/>₈₆



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Seeds of Native Health

A Campaign for Indigenous Nutrition

Home About Impact Partners Contact Resources News Contact

Eliminating
food deserts



Extreme poverty and the loss of traditional foods have caused many Native Americans to suffer from inadequate diets and have led to widespread, chronic health problems.

Imagine what we can do together.

<http://seedsofnativehealth.org>



81%

81% of Native Americans adults are overweight or obese.

(Source: American Indian Health Survey, 2014)

15.9%

15.9% of Native Americans suffer from type 2 diabetes, more than double the number of Caucasians.

(Source: American Diabetes Association, 2012)

24%

More than 24% of Native American households are below the federal poverty line, compared to 15% of the U.S. population as a whole.

(Source: PEW Research Center, 2014)

<http://seedsofnativehealth.org>



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The doctor of the future will give no medicine but will interest his patients in the care of the human frame, in diet and in the cause and prevention of disease.

~Thomas Edison



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We are free to be who we are – to create our own life out of our past, and out of the present. We are our ancestors. When we heal ourselves, we also heal our ancestors – our grandmothers, our grandfathers, and our children. When we heal ourselves, we heal Mother Earth.

~Dr. Rita Pitka Blumenstein



Please submit your questions through the chat box.

Q&A



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Visit CDC NDEP Website

<http://www.cdc.gov/diabetes/ndep>

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► Faith Leaders Toolkit

Bring information about type 2 diabetes prevention and management to your congregation and others



The National Diabetes Education Program (NDEP) works with partners to reduce the burden of diabetes and prediabetes by facilitating the adoption of proven approaches to prevent or delay the onset of type 2 diabetes and the complications of diabetes. NDEP is a joint program of the Centers for Disease Control and Prevention and the National Institutes of Health.

PARTNERING WITH NDEP

Learn about NDEP and find partnership resources.

WORKING IN COMMUNITIES

Find tools to help implement community programs.

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Find resources to support team care.

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Find webinars and courses to build your capacity.

FOR PEOPLE AT RISK FOR DIABETES

Find information on preventing type 2 diabetes.

FOR PEOPLE WITH DIABETES

Find information on managing diabetes.

FIND RESOURCES FOR SPECIFIC GROUPS



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NATIVES



AFRICAN AMERICANS & AFRICAN
ANCESTRY



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NDEP **National Diabetes Education Program**

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For more information call 1-800-CDC-INFO (800-232-4636)

TTY 1-(888) 232-6348 or visit www.cdc.gov/info.

To order resources, visit www.cdc.gov/diabetes/ndep.

Michelle Owens-Gary

MOwens1@cdc.gov

770-488-5014





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Thank you!



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