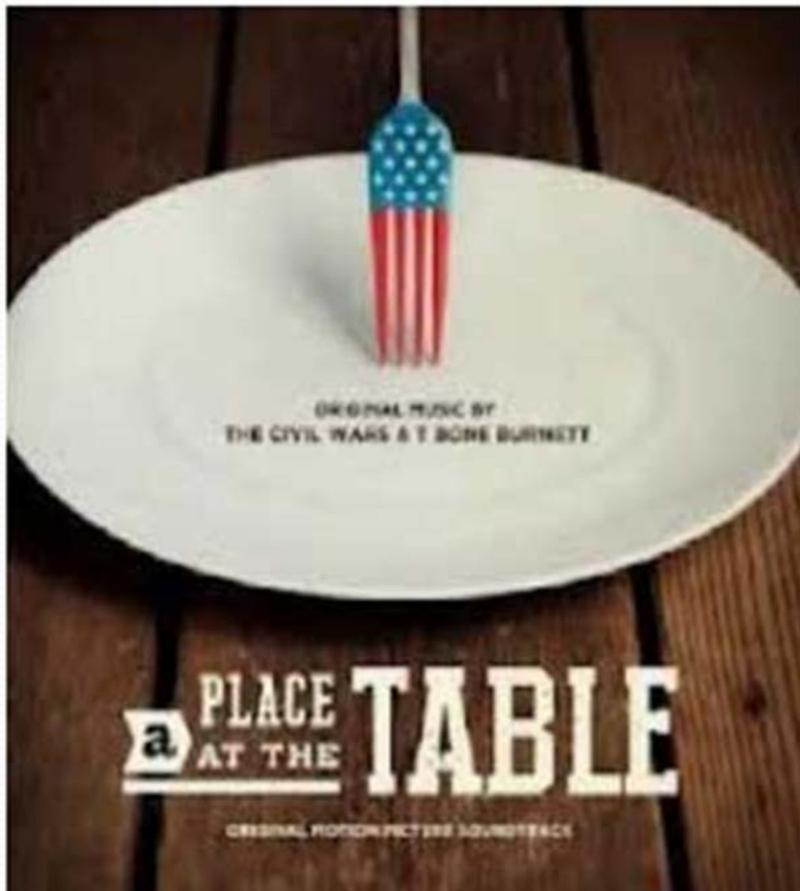


Food Insecurity and Diabetes: What's the Connection?

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A Place At the Table (Documentary)



Food Insecurity and Diabetes: What's the Connection?

Outline

- Awareness
- Resources
- Action



Definitions of Food Security

- **Food security** - access by all people at all times to enough food for an active, healthy life.
- **Low food security** - reports of reduced quality, variety or desirability of diet.
- **Very low food security** - reports of multiple indications of disrupted eating patterns and reduced food intake.

USDA Economic Research Service



What's happened to food prices?

- Since 1980
 - 40% increase in price of fresh vegetables and fruits
 - 40% decrease in price of processed foods

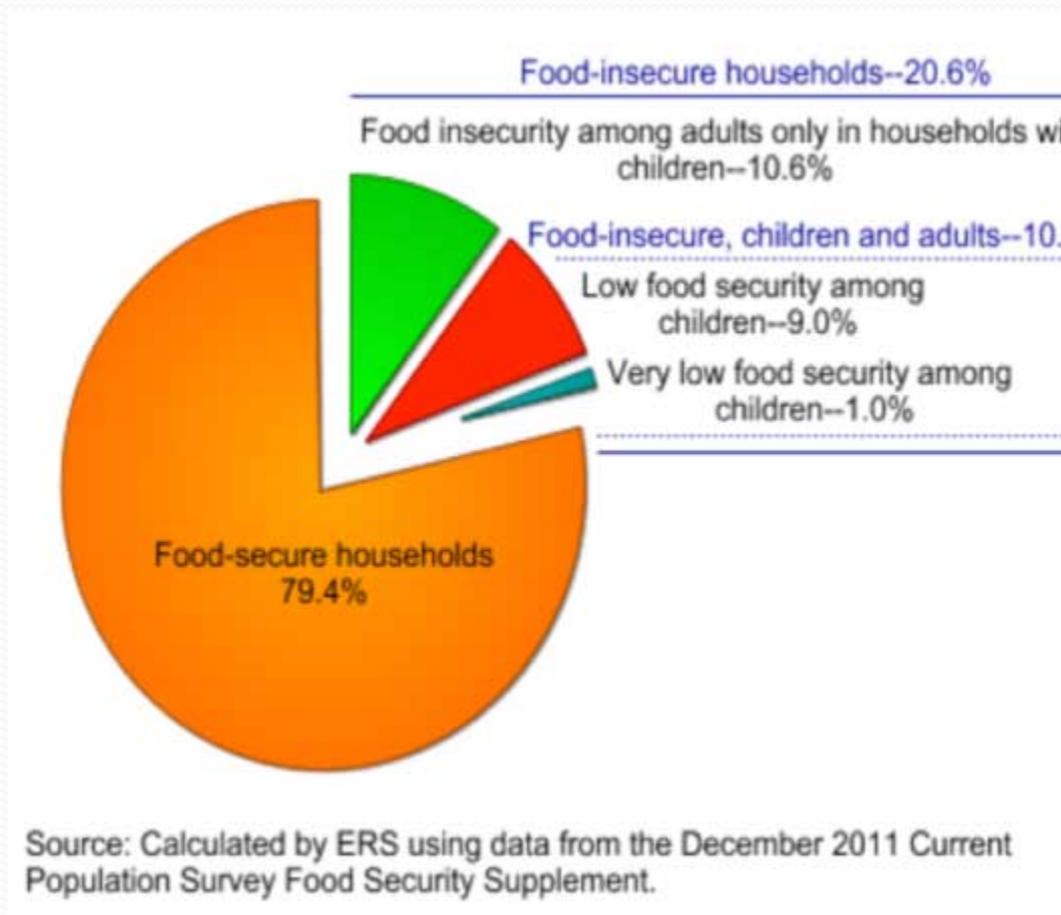
Dr. Marion Nestle, *Food Politics*



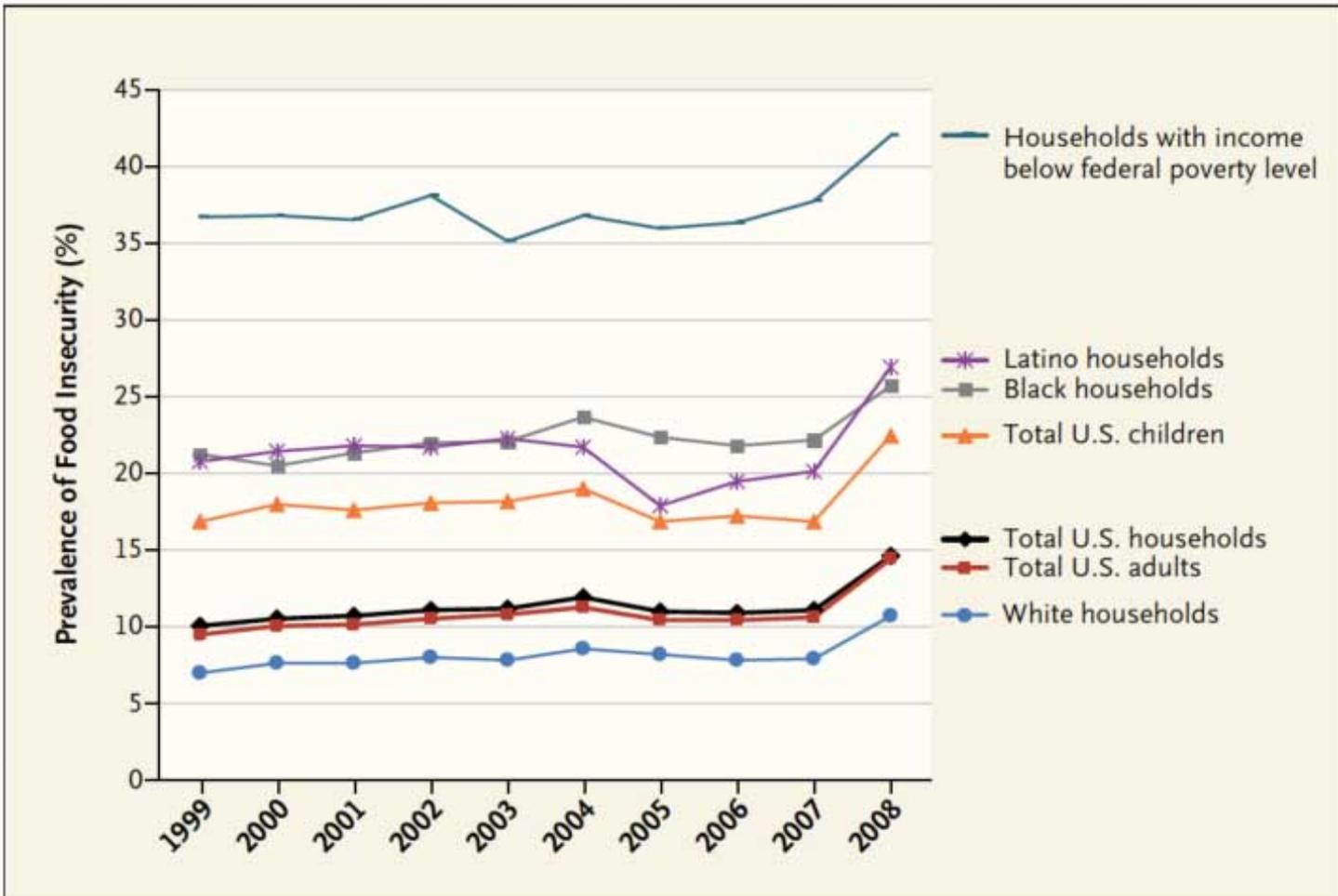
- “The true costs of the way we produce and market these foods add to the hidden medical costs of diabetes and heart disease. Perfect storm of malnutrition, rising prevalence of diabetes, and huge increase in the number of hungry families.”

Kelly Meyer, activist and co-founder, Teaching Gardens

Food Security Status of US Households with Children in 2011



Prevalence of Food Insecurity in US, 1999-2008



Seligman HK, Schillinger D. N Engl J Med. 2010 July 1;6-9

Addressing Child Hunger and Obesity in Indian Country: Report to Congress, 1/12/12

“AI/AN children have \approx **twice the levels of food insecurity**, obesity, and type 2 diabetes, relative to the averages for all U.S. children of similar ages.”

- Report available online at:
<http://www.fns.usda.gov/Ora/menu/Published/CNP/FILES/IndianCountry.pdf>



Food Insecurity among AI Families with Children

- **28%** of AI/AN households with children compared with **16%** of non-AI/AN households with children.

Gundersen C. J Popul Econ.
2008;21:191-215

- **≈ 40%** of families with kindergarten-age children in Pine Ridge, SD

Bauer KW, et al., AJPH. 2012
Jul;102(7)1346-52



Food Quantity vs. Nutritional Quality

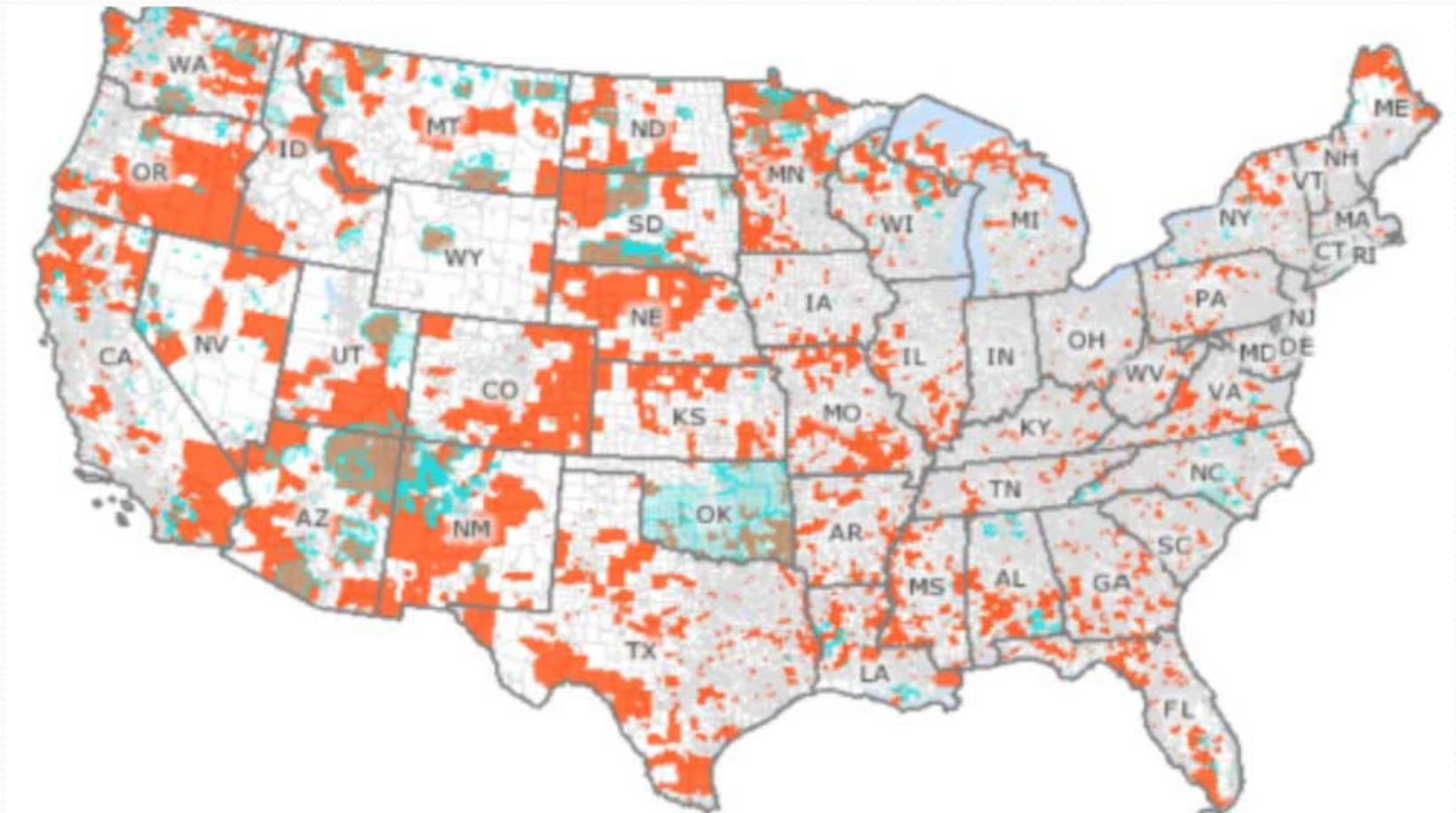
- “The challenge for low-income families in today’s modern food environment is not obtaining enough food, but rather **having dependable access to high-quality food.**”

Ludwig DS, et al., ...Opportunities to Reduce Childhood Hunger and Obesity: Restructuring SNAP (the Food Stamp Program).
JAMA. 2012 Dec 26;308(24):



Locations of Food Deserts and American Indian Reservations in the Contiguous United States. USDA Economic Research Service, 2012

Orange- Food Deserts **Teal – Reservation Borders** **Brown - Overlap**



“For diabetes risk, it matters what happened...”

- To us as **adults**
 - Diet and exercise choices
 - Stress and trauma
- To us as **children**
 - Stress and trauma
 - Nutrition
- To us **in the womb**
 - Nutrition and stress
- To our **parents**
 - Nutrition and stress
- To our **grandparents**
 - Nutrition and stress at time eggs and sperm are forming



Effects of Early Life Experience on Diabetes Risk.

Dr. Ann Bullock, DDTP Web-based training, non-CME Training

Influence of Household Food Insecurity on Weight Status and Pregnancy Complications



- Household Food Insecurity was Associated with Severe Obesity
 - Women with BMI ≥ 35 - at **3 times greater** risk of food insecurity
- Household Food Insecurity was Associated with:
 - Greater Gestational Weight Gain – 1.87 kg
 - 25% Higher Weight Gain Ratio
 - Gestational Diabetes Mellitus – **2.76 times greater** odds

Laraia BA, et al., J Am Diet Assoc. 2010 May; 110:692-701

Food Insecurity and Type 2 Diabetes

- NHANES (1999-2004 waves)
- Risk of clinical diabetes was \approx **50% higher** among adults living in food insecure households
- For low-income adults with diabetes unable to achieve $A_{1C} \leq 7.0\%$.
 - 69% of food insecure
 - 49% of food secure adults

Seligman HK, et al., J Nutr. 2010;140:304-10

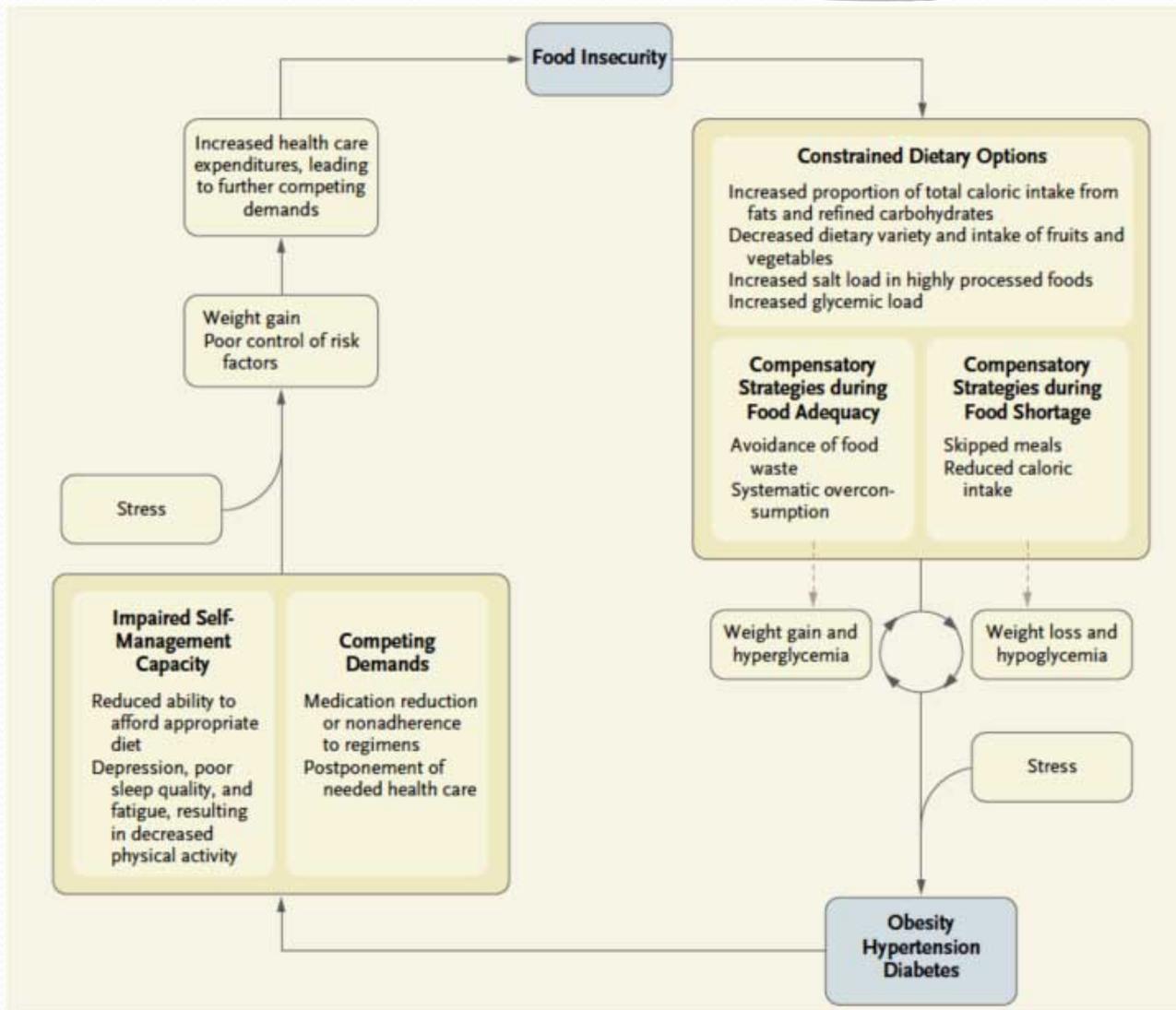
Weekly US Food Spending, 2011

- \$50/person for food-secure households
- \$37/person for food-insecure households

Coleman-Jensen A. et al. Household food insecurity in the US in 2011. USDA, Economic Research Service, 2012.

- “The inability to afford such foods is one likely mechanism for the associations between food insecurity and an increased incidence of diabetes and poor glycemic control.”

Seligman H, Schillinger D. N Engl J Med. 2010 July 1;363:6-9



Cycle of Food Insecurity and Chronic Disease

Seligman HK, et al., N Engl J Med. 2010 July 1;363:6-9

IHS Division of Diabetes April 2013

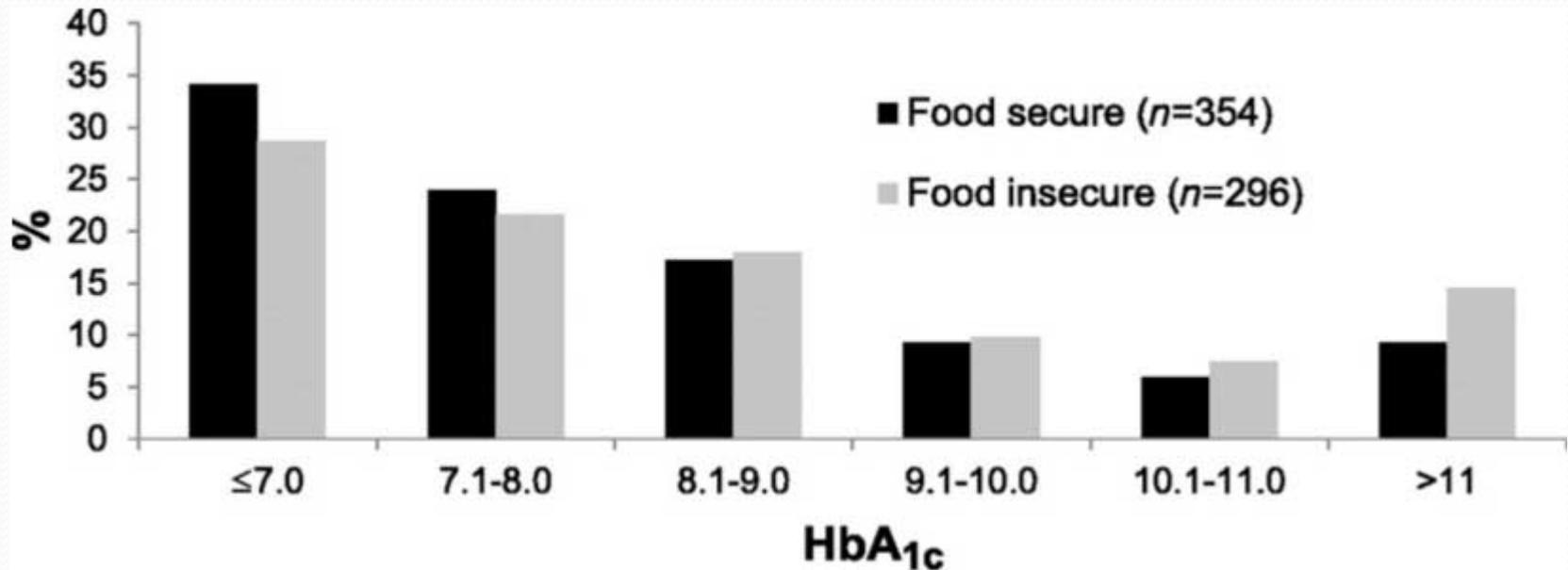
Why Food Insecure People Are Vulnerable to Diabetes and Obesity

- Increase in Stress
- Mothers restrict their own food intake
- Cycles of food deprivation and overeating
- Increase in availability of fast food restaurants
- Increase in exposure to marketing of obesity-promoting products
- Decrease in physical activity resources
- Decrease in full service grocery stores
- When available, healthy food more expensive

Institute of Medicine. Hunger and Obesity. 2011.

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

Association between HbA1c and food security status among patients with diabetes receiving care in safety net clinics (n = 710)



Seligman H K et al. Diabetes Care 2012 Feb;35:233-8

Food Insecurity & Glycemic Control

- 46% of patients were food insecure
- More likely to report difficulty following diabetes meal plan (64% vs. 49%)
- Experienced higher emotional distress related to diabetes

Seligman HK, et al., Food insecurity and glycemic control among low-income patients with type 2 diabetes. *Diabetes Care*. 2012 Feb;35(2):233-8

Food Insecurity & Hypoglycemia

- 61% of patients with diabetes in an urban, safety net hospital experienced at least one hypoglycemic reaction annually.
- One-third of episodes attributed to the inability to afford food.
- 8% of the sample reported they had decreased or stopped taking their insulin because they did not have enough to eat.

Nelson K, et al., Hunger in an adult patient population. JAMA. 1998;279(15):1211-4

- **Individualize** glycemic targets during food scarcity

Screening for Food Insecurity in Clinic Setting – 1 Question

- **“In the past month, was there any day when you or anyone in your family went hungry because you did not have enough money for food?”**
- 78% of those who responded “yes” also reported being food insecure by the 18-item Household Food Security Scale, and
- 84% of those who responded “no” reported being food secure using the 18-item Scale

Kleinman RE, et al. *Ambul Pediatr* 2007;7(4):278-84

Screening for Food Insecurity in Clinic Setting - 2 Items

- 1) **“Within the past 12 months we worried whether our food would run out before we got money to buy more,” and**
 - 2) **“Within the past 12 months the food we bought just didn’t last and we didn’t have money to get more.”**
- A response of “often true” or “sometimes true” to either item carries 97% specificity and 83% sensitivity for food.

Hager ER, et al. Pediatrics 2010;126:e26–e32

Food Insecurity and Diabetes: What's the Connection? Outline

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Emergency Food Assistance



- In 1980 – 200 food banks
- Today – over 40,000 food banks

“We have basically created a secondary food system for the poor.”

Janet Poppendieck, author of *Sweet Charity? Emergency Food and the End of Entitlement*

“The number of poor and hungry is too big for the charitable food sector to handle. 49 million people are food insecure...the charitable food sector would have to increase in size more than 6-fold to even feed all of these persons for a week every month.”

Fisher, Andy. *Getting off the anti-hunger treadmill. A Place at the Table*, 2013.

AI/AN Participation in Federal Food Assistance Programs

- FDPIR (Commodity) - 77,641
- SNAP (Food Stamps) - 803,315
- WIC - 210,914
- Nat'l School Lunch - 877,840



Addressing Child Hunger and Obesity in Indian Country:
Report to Congress, 1/12/12



SNAP Supplemental Nutrition Assistance Program



- “1 of every 2 children in this country will be on food assistance at some point during their childhood.”

Secretary of Agriculture Tom Vilsack

- “Half of all adults receive SNAP benefits at some time between ages 20-65 y”

Rank MR et al., Arch Pediatr Adolesc Med. 2009;163(11):994-9

- 2 of the most detrimental economic conditions affecting a child's health are poverty and food insecurity.
- ≈75% of those eligible for the program participate in and receive food stamp benefits.

USDA Supplemental Nutrition Assistance Program Participation Rates, FY 2010

Indigenous Food Coalitions

- Food sovereignty, food security, and food policy councils are issues that are gaining momentum in AI/AN communities.
- IHS Nutrition Program is facilitating monthly calls.
 - White Mountain Apache Community Visioning Project, AZ - focusing on policy approaches, gardens, farmers market
 - Suquamish Community Project, WA – community workgroup presented findings on food security to Tribal Council

Alaska Food Policy Council

- Works to strengthen Alaska's food systems to spur local economic development, increase food security, and improve nutrition and health.
- Presentations at the 2012 Alaska Native Diabetes Conference. "Hunt. Fish. Grow. Pick"
- Blog - <http://alaskafoodpolicy.blogspot.com/>



<http://www.anthctoday.org/storeoutside/>

<https://www.facebook.com/StoreOutside?ref=stream>

The screenshot shows the website for the Alaska Native Tribal Health Consortium. At the top, there is a search bar and a navigation menu with links for ABOUT ANTHC, HOSPITAL, WELLNESS, CONSTRUCTION, BUSINESS, and CAREERS. Below the menu, there are links for Who We Are, Who We Serve, Our Leadership, Calendar, Consortium Executive Team, Our Vision, and Contact. The main content area features a video player with a play button. Above the video is a banner image with the text "Store Outside Your Door" and a "Share" button. Below the video, there is a "Fish Fact" section with the text: "Rockfish are native to this region and can be found on rocky bottom areas." At the bottom of the page, there is a section titled "Traditional Foods, Contemporary Chef" with a brief description of the Store Outside Your Door project as a Wellness and Prevention initiative. On the right side of the page, there is a Facebook social plugin titled "Find us on Facebook" showing the "Store Outside Your Door" page with a "Like" button and a description: "Silver Salmon ready for the smokehouse. ANTHC's Store Outside/Traditional Foods, Contemporary Chef production in the community of Old Harbor." Below this, it says "647 people like Store Outside Your Door." and shows profile pictures of Fred, Rahmia, and Janica.

Food and Cooking Demos Barrow, AK

- Angela Valdez, MS RD CDE
- Free Fun Day/Health Fair
- Muktuk Sushi- Tlingit Chef Rod Kinneen

<http://www.youtube.com/watch?v=f6Q8zAAWEts>

- Cooking classes, “Kids in the Kitchen”
- Collaboration/ Cooperative Extension Food demos in grocery store
- Traditional gardens



SNAP/Food Stamp Challenge

- Barrow, AK team – 1 week – their experience “...a vegetarian meal plan...”
- “Find a hunter to get a caribou leg.”

Food Research and Action Center’s SNAP Challenge Toolkit at:

http://frac.org/pdf/snap_challenge_toolkit_frac.pdf



Using Traditional Foods in T2DM Prevention

CDC Native Diabetes Wellness Program



MoGro-Pueblo communities, NM

www.mogro.net



Tohono O'odham Community Action, AZ



- Received USDA Farmers Market Promotion Program grant
- Reintroducing traditional food production – desert planting and harvesting

www.tocaonline.org

Lummi Nation, WA



NORTHWEST INDIAN COLLEGE
**TRADITIONAL
PLANTS & FOODS**

- 25 families –lifestyle intervention
- Weekly box of seasonal produce
- Monthly hands-on cooking



Resources

Addressing Child Hunger and Obesity in Indian Country: Report to Congress, 1/12/12

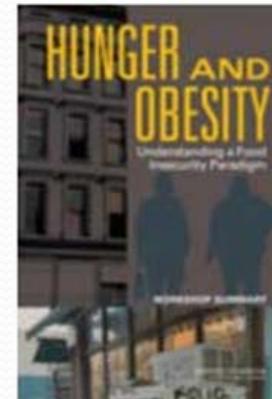
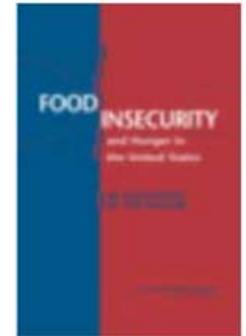
Food Insecurity and Hunger in the United States:

An Assessment of the Measure. Washington, DC: The National Academies Press, 2006

Hunger and Obesity:
Understanding a Food Insecurity Paradigm.

Washington, DC: The National Academies Press, 2011

Access to Affordable and Nutritious Food:
Measuring and Understanding Food Deserts
and Their Consequences. Washington, DC: USDA,
Economic Research Service, 2009



IHS Division of Diabetes Resources

<http://www.ihs.gov/MedicalPrograms/Diabetes/RESOURCES/Catalog/index.cfm>

Educator's Tip Sheet

Click on Printable Materials
– Nutrition

Eating Issues and Nutrition Tips for Educators Using **MY NATIVE PLATE**

My Native Plate provides a visual guide to help your clients and patients eat balanced meals of reasonable portion sizes. Use it as a starting point for nutrition education, a daily reminder, and a way to introduce healthy eating to family members of all ages. Read the following five *Issues to Consider* prior to using *My Native Plate*. Download and distribute *700 Tips to a Great Plate*® when your clients are ready for more information.



Issues to Consider

Understanding a few issues that affect people's eating habits can help you introduce *My Native Plate* to your clients. Keep these points in mind and discuss them in a positive, supportive way:

1. **Emotions and stress can impact your clients' food selection and portion sizes. The reasons why people eat certain foods, and why they overeat, are often linked to depression, anxiety and stress.**
 - Ask your clients what they are eating, how much and possible reasons why.
 - Refer them to other health care professionals, spiritual leaders or counselors if needed.
2. **Not consistently having enough money to buy good quality food will affect your clients' eating habits. Food insecurity can cause your clients to overeat available foods, skip meals and/or choose unhealthy foods that are less expensive.**
 - Find out if your clients have consistent access to nutritious foods and are getting enough nutrition from the foods they usually eat.
 - Refer them to community food resources program if needed.
3. **Family and social gatherings are important to your clients and can affect healthy eating. Not eating foods brought in traditionally, traditionally and multiple can be considered safe. Research your clients**

1. Emotions and stress
2. Food insecurity
3. Social gatherings
4. Traditional foods
5. Convenience foods

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Healthy, Hunger-Free Kids Act – Opportunities for Improvement

- USDA implementing changes included in HHFKA
- WIC- ↑ breastfeeding support
- Healthier school meals
- Increased access to food assistance
 - After-school snacks/meals
 - School Breakfast Program
- *Let's Move!* in Indian Country



Visit www.schoolfoods.org/back2school for more information.

- Screen patients for food insecurity
- **Target pregnant women/women of child-bearing age, infants, and young children (1,000 day window)**
- Provide food assistance information to patients, clinic staff, and community members.
- **Help people sign up for food assistance**
- Work with Tribes to expand access to federal food programs



- Work with community champions to create/strengthen food policy groups
- **Volunteer**
- Keep informed about Tribal, national, and state legislation
 - www.FRAC.org
 - www.FeedingAmerica.org
 - www.NoKidHungry.org
- **Advocate**
- Help a person become smoke-free
- **Action I can take today:** _____



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A Place At The Table

- Play trailer:
<http://www.amazon.com/Place-Table-Watch-While-Theaters/dp/BooBN4ZF98>