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

- Food-insecure households: 20.6%
  - Food insecurity among adults only in households with children: 10.6%
  - Food-insecure, children and adults: 10.0%
    - Low food security among children: 9.0%
    - Very low food security among children: 1.0%

- Food-secure households: 79.4%

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 ≈ twice the levels of food insecurity, obesity, and type 2 diabetes, relative to the averages for all U.S. children of similar ages.”

Food Insecurity among AI Families with Children

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


- ≈ **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):

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 $\geq 35$ - 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 $\text{A1C} \leq 7.0\%$.
  - 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


• “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.”

Cycle of Food Insecurity and Chronic Disease
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

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

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.


• 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

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.

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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”

• 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.


http://www.anthctoday.org/storeoutside/
https://www.facebook.com/StoreOutside?ref=stream
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:
Using Traditional Foods in T2DM Prevention
CDC Native Diabetes Wellness Program

Traditional Foods Partners

- Nooksack Indian Tribe
- Salish Kootenai College
- Confederated Tribes of Siletz Indians
- United Indian Health Services
- Indian Health Care Resource Center of Tulsa
- Ramah Navajo School Board
- Tohono O’odham Community Action
- Aleutian Pribilof Islands Association
- Southeast Alaska Regional Health Care Consortium
- Red Lake Band of Chippewa Indians
- Sault Ste. Marie Tribe of Chippewa Indians
- Standing Rock Sioux Tribe
- Santee Sioux Nation
- Prairie Band Potawatomi Nation
- Eastern Band of Cherokee Indians
- Catawba Cultural Preservation Project
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

- 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: 

Hunger and Obesity: 

Educator’s Tip Sheet
Click on Printable Materials – Nutrition

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
• 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