Food Matters: Food Insecurity and Diabetes

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IHS Advancements in Diabetes
A family meal in Tumwater, WA
Always Getting Ready:
Yup’ik Eskimo Subsistence in SW Alaska,
Barker JH, et al., 1993, Univ. of WA Press
NPR, July 27, 2016

Foods available at the Aleut Community Store in Pribilof Islands
Type 2 Diabetes Treatment Algorithm

Diabetes Care 2016;39(Suppl. 1):S54.)
Definitions of Food Security

- **Food security** means 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
2014 data from the US Department of Agriculture’s Economic Research Service

U.S. households with children by food security status of adults and children, 2014

- Food-insecure households -- 19.2%
- Food insecurity among adults only in households with children -- 9.8%
- Food-insecure, children and adults -- 9.4%
  - Low food security among children -- 8.3%
  - Very low food security among children -- 1.1%

Food-secure households -- 80.8%

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.”

Measuring Access to Healthful, Affordable Food in AI/AN Tribal Areas, 2014

- AI/AN Tribal area populations are mostly rural, unlike the national population
- 76.8% of low-income individuals in Tribal areas were more than 1 mile from a supermarket vs. 36.4% of all Americans.
- Greatest disparity for those without a vehicle


Orange- Food Deserts     Teal – Reservation Borders     Brown - Overlap
Food Insecurity among AI Families with Children

≈ 40% of families with kindergarten-age children in Pine Ridge, SD reported experiencing food insecurity.

Bauer KW, et al., AJPH. 2012 Jul;102(7)1346-52
“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):2567-68
“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*
Conceptual framework describing the influence of household food insecurity on chronic conditions and health outcomes

**Individual Characteristics**
- Age
- Education
- Race/ethnicity
- Income
- Marital Status

**Moderators**
- Genetic Factors
- Life Course Stage
- Chronic Stress
- Food Environment

**HOUSEHOLD FOOD INSECURITY**

**Metabolic Disturbance**
- Visceral Adiposity
- Insulin Resistance

**Health Impact**
- Early onset puberty
- Diabetes
- Chronic Conditions
- Complications

Barbara A. Laraia Adv Nutr 2013;4:203-212
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 Among Pregnant Adolescents (n=881) (14-21 y) and Infant Birth Outcomes

- More than half of pregnant adolescents experience alarming rates of food insecurity
  - 26% at least one time during pregnancy
  - 27% chronic food insecurity during the pregnancy
- Those who were food insecure, ↑more depressive symptoms, →lower birth weight and earlier gestational age
- Implications for inter-generational effects

Why Food Insecure People Are Vulnerable to Overweight and Diabetes

- High levels of stress
- Mothers often restrict their own food intake to protect their children from hunger
- Cycles of food deprivation and overeating

Institute of Medicine. Hunger and Obesity. 2011
Drewnowski A. Am J Clin Nutr 2010;92:1181-8

- Greater availability of fast food restaurants
- Greater exposure to marketing of obesity-promoting products
- Fewer physical activity resources
- Lack of full service grocery stores
- When available, healthy food more expensive
Food Insecurity & Glycemic Control

- Cross-sectional survey of 711 patients with type 2 diabetes in safety net clinics in San Francisco or Chicago
- 46% of patients were food insecure
- Mean A1C
  - 8.55% among food insecure participants
  - 8.10% among food-secure participants
- More likely to report difficulty following diabetes meal plan (64% vs. 49%)
- Experienced higher emotional distress related to diabetes

Food Insecurity and Metabolic Control Among U.S. Adults With Diabetes

- **Objective:** to determine whether food insecurity is associated with worse glycemic, cholesterol, and blood pressure control in adults with diabetes.
- **Methods:** Data from 1999-2008 NHANES for 2,557 adults with diabetes. Outcomes of interest were those with A1C>9%, LDL>100 mg/dL, BP >140/>90 mmHg.
- **Food insecurity significantly associated with poor glycemic control, LDL control, though not associated with BP control.**

Food Insecurity Assessment Tool and Resource List

To help your patients and clients improve their health, it is important to understand food insecurity and provide them with resources to get more healthy food.

When patients/clients and their children cannot get enough healthy food, they have food insecurity. They:

- Are at greater risk for being emotionally distressed.
- Eat less expensive foods which are often unhealthy.
- Have little choice over what kinds of food to buy or receive for free, making it difficult or impossible to eat balanced meals.
- Have periods when they don’t eat, then overeat when food is available. If they have diabetes, this makes it very difficult to manage blood sugar.
- Have a greater risk for being overweight or obese.
- Are more likely to get diseases like diabetes.

To help your patients/clients lessen food insecurity, take these three steps:

1. Read each statement* and ask your client if the statement is often true, sometimes true, rarely true, or never true.
   - Within the past 12 months, we worried whether our food would run out before we got money to buy more.
   - Within the past 12 months, the food we bought just didn’t last and we didn’t have money to get more.

2. If your client responds “often true” or “sometimes true” to either statement, they likely have food insecurity. Help them get more food by filling out the list of resources (see next page) and giving it to them.

3. Advocate for nourishing foods in your community. Take steps to increase the availability of nutritious, affordable food.


Read each statement and ask your client if the statement is often true, sometimes true, rarely true, or never true.

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 statement carries 97% sensitivity and 83% specificity for food insecurity.

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Where to Get Food Assistance in This Community

Community Name:

Not having enough food for yourself and your family is stressful. Lack of good food makes it difficult to provide nutritious meals that help children grow and adults stay healthy. The thought of not having enough food can make you worry.

There are resources to help. If you need food assistance, please don’t wait to contact the programs on this list. They can help you get the food you need for yourself and your family.*

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Produced by the IHS Division of Diabetes Treatment and Prevention, 2015. To print this, go to www.diabetes.ihs.gov and search Food Insecurity Tool in the upper right corner of the web page.
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.
Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
SNAP Supplemental Nutrition Assistance Program (< Food Stamps)

- “1 of every 2 children in this country will be on food assistance at some point.” USDA Secretary Vilsack

- Research has repeatedly demonstrated that 2 of the most detrimental economic conditions affecting a child's health are:
  - Poverty
  - Food insecurity

- In 2013, average monthly benefit was $133; less than $1.50 a meal

- SNAP recipients typically run through monthly allotment in 3 weeks, then turn to food pantries.

http://www.nationalgeographic.com/foodfeatures/hunger/

- Only 75% of those eligible for the program actually participate in and receive SNAP benefits.

USDA Supplemental Nutrition Assistance Program Participation Rates, FY 2010
MoGro-Pueblo Communities, NM

- www.mogro.net
Let’s Move! In Indian Country

• Creating a healthy start on life.
• Developing healthy learning communities.
• Increasing opportunities for physical activity.
• Ensuring families have access to healthy affordable foods.
Traditional Foods in T2DM Prevention
CDC Project, 2008-2014

Satterfield, D, et al., MMWR Suppl, Feb 12, 2016, 65(1):4-10

Pilot Food Bank Intervention Featuring Diabetes-Appropriate Food

- 687 food bank clients with diabetes, 3 states
- Feeding America Diabetes Initiative - 6-month pilot – 4 components:
  - Screening for diabetes, A1C, and BG monitoring
  - Distributing diabetes-appropriate food boxes (1-2 times/mo.)
  - Bi-directional referrals with primary care clinics (HIPAA)
  - DSME/S through written materials, CDE-led group classes and 1:1 discussion, tasting demonstrations
- A1C improved from average of 9.52% to 9.04%

Pilot Food Bank Intervention & Diabetes-Appropriate Food (cont.)

Distributing diabetes-appropriate food:

- Pre-packaged boxes including whole grains, beans, low-sodium vegetables, and shelf-stable dairy products
- Supplemented with perishable food such as fresh produce, non-fat or low-fat milk, yogurt, cheese, whole grain bread, frozen lean meat
- Each box contained recipes and cooking tips
- RD and/or CDE onsite for DSME/S for individuals and group sessions

• Satisfaction with food box was high, 60% reported eating more fruit and vegetables
• Consider food banks and food pantries as DSME/S site.


FeedingAmerica.org
Cycle of Food Insecurity & Chronic Disease: Diabetes

Food Policy

Good Foods Good Laws: Putting Food Policy to Work in the Navajo Nation, 2015

Feeding Ourselves

- Innovations in healthy food access in Indian Country
- Community-driven solutions – Cheyenne River Youth Garden Project, SD 2-acre pesticide free garden
- Grassroots advocacy
- Policy change – example: Navajo Nation junk food tax and zero tax on fruits and vegetables
- Available at http://www.heart.org/idc/groups/heart-public/@wcm/@adv/documents/downloadable/ucm_475567.pdf
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 2016 Alaska Food Festival and Conference – addressed food insecurity in urban and rural communities

https://akfoodpolicycouncil.wordpress.com
Tohono O’odham Community Action (TOCA)

- Reintroducing traditional food production – desert planting and harvesting
- Native food sovereignty – right of peoples to healthy and culturally appropriate foods.

www.tocaonline.org

Community food assessment tool (8 sets of exercises)

- In 2014, the Diné Policy Institute found:
- 65% of individuals received food assistance
- 65% had food insecurity
- >50% travel off reservation for food purchases
- Large % cited desire to have > access to traditional foods


Available at:
Educator’s Tip Sheet to Use with My Native Plate

Click on Printable Materials – Nutrition

5 Key Focus Areas:

1. Emotions and Stress
2. Food Insecurity
3. Social Gatherings
4. Traditional Foods
5. Convenience Foods
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IHS DDTP Resources

https://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=resources

Printable Materials

Printable Materials

These materials are available now to use during one-on-one or group education classes, to set out for your patients or clients, or to share with your friends and family members. Check back to this page often, as new materials are being added for your convenience.

* Media Tools contains public service announcements (PSAs) and articles for you to forward to your newsletter editor.

Tell us what you think about this page. If you experience problems downloading the materials, please contact the Division of Diabetes for assistance.

Send an email to diabetesinfo@ihs.gov.

NUTRITION PORTION CONTROL

My Native Plate

Download Now!

Download Now!

NUTRITION FOOD INSECURITY

Food Insecurity Assessment Tool and Resource List

Download Now!
More Action Steps

- Be an advocate – do a needs assessment, identify and list the food resources in your community
- Work with community champions to create or strengthen food policy groups.
- Step out of clinic – provide DSME/S in community and partner with schools, community centers, senior sites, food distribution programs, food banks
- Volunteer your time, expertise, and voice to reduce food insecurity in your community.
Food Matters!

From Hunger to Health
How Service Providers can Empower Americans for the Journey from Hunger to Health.
https://hungerintohealth.com/