Nutrition and Diabetes

SPECIAL CONSIDERATIONS FOR ADULTS EXPERIENCING HOMELESSNESS

THURSDAY
NOVEMBER 16, 2017
DISCLAIMER

This activity is made possible by the Health Resources and Services Administration, Bureau of Primary Health Care. Its contents are solely the responsibility of the presenters and do not necessarily represent the official views of HRSA.
Overall Learning Objectives

After viewing webinar participant will be able to:

- Describe the role nutrition has in the control of diabetes
- Identify at least one challenge clients with diabetes have in eating nutritious food.
- Name one resource/tool that may be used to educate clients about nutrition and diabetes.
Speakers

Darlene M. Jenkins, DrPH, MPH, CHES
Sr. Director of Programs, National HCH Council

Veronica J. Oates, PhD, RD, LD
Associate Professor, Tennessee State University

Tracy Tinker, RN, MSN, CDE, CNL
RN/Case Manager HCH Manchester
Diagnosed Diabetes, Age-Adjusted Percentage, Adults with Diabetes - U.S., 2015

Source: www.cdc.gov/diabetes/data
Number and Percentage of U.S. Population with Diagnosed Diabetes, 1958-2015

Prevalence of Diabetes, 2017

- 30.3 million people HAVE DIABETES
  - (9.4% of the U.S. population)
- 23.1 million people are DIAGNOSED
- 7.2 Million are UNDIAGNOSED
  - (23.8% of people are undiagnosed)
- Less than high school - 12.6% vs. 9.5% (HS education) vs. 7.2% (> HS education)

Source: National Diabetes Statistics Report, CDC, 2017
Total Patients Seen with Diabetes Diagnosis at Health Centers 330(h)

Source: Uniform Data System, 2016. Analysis by Brett Poe, NHCHC
Percent of Patients with Uncontrolled Diabetes (A1C >9)

Source: Uniform Data System, 2016. Analysis by Brett Poe, NHCHC
Factors Affecting Diabetes Control

- Unstable Housing
- Oral Health
- Stress
- Medication Safe Storage Availability
- Nutrition
Managing Diabetes: Focus on Nutrition

VERONICA J. OATES, PHD, RDN, LDN

ASSOCIATE PROFESSOR, TENNESSEE STATE UNIVERSITY
Learning Objectives

The purpose of this segment is to provide information on the:

• Association between diabetes and nutrition
• Importance of nutrition for clients with diabetes who are also homeless
• Tool that can be used by clients with diabetes
  ○ Plate Model
Association Between Diabetes and Nutrition

- Normally after a meal or food is eaten, insulin signals cells to receive glucose from blood.

- People with diabetes may have:
  - Insufficient insulin production
  - Ineffective insulin production
  - A combination of both
### Blood Glucose Ranges

- **Normal (A1C < 5.7%)**
  - 70-99 mg/dL (fasting)
  - Less than 140 mg/dL (2 hours after a meal)

- **Prediabetes (A1C 5.7-6.4%)**
  - 100-125 mg/dL (fasting)
  - 140-199 mg/dL (2 hours after a meal)

- **Diabetes (A1C 6.5% or more)**
  - >125 mg/dL (fasting)
  - 200+ mg/dL (2 hours after a meal)
Blood Glucose

- Glucose comes from carbohydrates
  - Fruits
  - Vegetables
  - Grains

- Components of carbohydrates:
  - Sugar
  - Starch
  - Fiber

- Homeostasis is important to every cell in the body
  - Body will make glucose from protein and fat if no carbs eaten

- Regulated by:
  - Hormones (insulin, glucagon & epinephrine)
  - Food
  - Physical activity
Importance of Nutrition for Clients with Diabetes Who are Homeless

- Complications of diabetes are acute and chronic
  - Blurry vision, poor circulation, infections
  - Cardiovascular disease, kidney failure, blindness, gangrene

- Goal is to maintain near-normal blood glucose levels

- Diet is an important component of diabetes treatment
  - Best managed with the help of a registered dietitian nutritionist
Recommendations for Diabetes

- Carbohydrate intake should be consistent, spaced throughout the day
  - 3 meals
  - 2 snacks

- Variety of eating patterns:
  - DASH diet
  - Mediterranean diet
  - Plant-based diet
Recommendations for Diabetes

- Consider the source of the carbohydrate

- Carbohydrates should come from:
  - Vegetables, fruits, whole grains, legumes, and low-fat/nonfat dairy products
  - Consider the Glycemic Index of foods

- Reduce saturated and trans fat intake

- Avoid foods that have added fats, sugar, and sodium
Plate Method: A Visual Tool

Plate is 9” in diameter with regular-size portions

- **Vegetables**: These foods have little effect on blood sugar.
- **Starch and Bread**: These foods slightly raise blood sugar.
- **Meat and Other Protein**: These foods raise blood sugar.
Plate Method in Five Steps

- Visually divide the plate in half
  - Fill one half of the plate with non-starchy vegetables
- Divide the other half of the plate in half
  - Put your protein in one section
  - Put your grain and starchy food in the other section
- Add a serving of fruit
- Add a serving of low- or nonfat dairy
- Add a low-calorie drink

http://lucasresearch.org/diabetes-care-plan/
## Non-Starchy Vegetables

- Eggplant
- Cabbage
- Broccoli*
- Tomatoes
- Spinach
- Peppers
- Cauliflower
- Carrots
- Zucchini

- Brussels sprouts*
- Asparagus
- Beets
- Kale*
- Artichoke
- Cucumbers
- Green beans
- Arugula
- Bean sprouts

- Greens
- Radishes
- Mushrooms
- Okra
- Onions
- Leeks
- Jicama
- Rhubarb
- Summer squash

* Also high in protein
Starchy Foods

- Green peas
- Rice
- Corn
- Yucca
- Sweet potato
- Plantain
- Quinoa*
- Tortillas
- Potatoes
- Brown rice
- Yucca
- Lima beans
- Pumpkin
- Butternut squash
- Pasta
- Dried beans
- Legumes
- Bread
- Cereal
- Couscous
- Lentils*

* Also high in protein
Meat and Other Protein

- Beans and lentils
- Nuts and seeds
- Fish
- Seafood
- Chicken
- Turkey
- Beef
- Hummus
- Soy nuggets or burgers
- Textured vegetable protein
- Eggs
- Cheese
- Pork
- Low-fat Cottage cheese
Resources

- American Diabetes Association
  - [http://www.diabetes.org](http://www.diabetes.org)
- Academy of Nutrition and Dietetics
  - [http://www.eatright.org/](http://www.eatright.org/)
- Lucas Research
Managing Diabetes: Assessing and Partnering with Clients

TRACY TINKER, RN, MSN, CDE, CNL

RN/CASE MANAGER
HEALTH CARE FOR THE HOMELESS,
MANCHESTER, NH
Learning Objectives

The purpose of this segment is to provide information on the:

- Assess clients to identify financial barriers to successfully self-managing diabetes.
- Partner with a client who has financial concerns to implement strategies to overcome barriers to effective diabetes self-management.
Social Determinants of Health for People who are Homeless:

- Neighborhood and built environment
- Health and health care
- Social and community context
- Education
- Economic stability

Food Insecurity
Food Insecurity and the Relationship to Health

  - Examined health status, behaviors, and health care access associated with food insecurity for 16,934 US adults aged 20 years or older
  - Food insecurity affected 19.3% of US adults (n=4,555)
  - Food insecurity was measured using the USDA U.S. Household Food Security Survey Module
    - 18 question
    - 10 question
    - 6 question

Source: https://www.cdc.gov/pcd/issues/2016/16_0103.htm
HH3. “The food that (I/we) bought just didn’t last, and (I/we) didn’t have money to get more.” Was that often, sometimes, or never true for (you/your household) in the last 12 months?

[ ] Often true
[ ] Sometimes true
[ ] Never true
[ ] DK or Refused

HH4. “(I/we) couldn’t afford to eat balanced meals.” Was that often, sometimes, or never true for (you/your household) in the last 12 months?

[ ] Often true
[ ] Sometimes true
[ ] Never true
[ ] DK or Refused

AD1. In the last 12 months, since last (name of current month), did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?

[ ] Yes
[ ] No (Skip AD1a)
[ ] DK (Skip AD1a)

AD1a. [IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
   [ ] Almost every month
   [ ] Some months but not every month
   [ ] Only 1 or 2 months
   [ ] DK

AD2. 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
   [ ] DK

AD3. In the last 12 months, were you every hungry but didn't eat because there wasn't enough money for food?
   [ ] Yes
   [ ] No
   [ ] DK

**SCORING**

- HH3 and HH4 often or sometimes = 1 point each
- AD1, AD2, and AD3 if response is yes = 1 point each
- AD1a Almost every month and some months but not every month = 1 point

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>0 – 1</td>
<td>High or marginal food security</td>
</tr>
<tr>
<td>2 – 4</td>
<td>Low food security</td>
</tr>
<tr>
<td>5 – 6</td>
<td>Very low food security</td>
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</tbody>
</table>

Food insecurity and the relationship to physical health and mental health (number of days in the last month in which physical or mental health was self-reported as not good)

<table>
<thead>
<tr>
<th></th>
<th>Poor mental health</th>
<th>Poor physical health</th>
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</thead>
<tbody>
<tr>
<td>Food Insecure</td>
<td>3.4</td>
<td>5.1</td>
</tr>
<tr>
<td>Food Secure</td>
<td>3.4</td>
<td>3.2</td>
</tr>
<tr>
<td>Total NHANES</td>
<td>4</td>
<td>3.6</td>
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</tbody>
</table>

Source: https://www.cdc.gov/pcd/issues/2016/16_0103.htm
Food Insecurity and the Relationship to Diabetes

Source: https://www.cdc.gov/pcd/issues/2016/16_0103.htm
Food Insecurity and the Relationship to Diabetes Self-Efficacy

- Inadequate access to food lowers self-efficacy among adults with diabetes.
- There is a direct correlation between housing instability and food insecurity. 100% of the clients who lacked a place to live were food insecure.
- It is lack of access to food rather than low income that affects diabetes self-management.

Food Pantries

Source: http://211.org/
Farmer’s Markets

Soup Kitchen
Literacy and Health Literacy
Health Literacy

- Limited health literacy
  - Decreases ability to comply with treatment plan – diabetes numeracy
  - Increases difficulty in managing a chronic illness

Low and Very Low Literacy Tools

Healthy Eating and Diabetes
Healthy eating prevents the sugar in your blood from getting too high or too low. Healthy eating can keep your weight down and prevent complications from diabetes.

There are several ways to plan what and how you eat. What works best for you and your lifestyle may be different than for someone else with diabetes. Make sure that you eat:

- Eating the right kinds of food
- Not eating too much of any food
- Eating regular meals with appropriate snacks

Eating Right with Diabetes
Carbohydrates are starchy foods such as bread, rice, and potatoes. They give your body and brain energy, but they can also raise the sugar in your blood. Whole grain and high fiber carbohydrates are better for you than white bread and white pasta. High fiber carbohydrates help lower cholesterol and keep your blood sugar low. Some examples include: wheat bread, rye bread, oats, pinto beans, black-eyed peas, barley, corn, peas, potatoes, and tortillas. Look for products that say “whole grain” on them.

Eating the Right Amount
This amount of food will not affect the level of sugar in your blood. Eat small amounts of food. If you are watching your sugar or your blood, make sure you watch these meals closely.

Eating at the Right Time
The timing of your meals can affect the level of sugar in your blood. If you want to lower your blood sugar high, eat the right meals too close together, or snack throughout the day, your sugar level can be too high.

It is important to eat after taking your medicine or insulin to make sure your sugar level does not fall too low. Do not skip meals.

Source: http://www.clinicians.org/images/upload/001.pdf
Case Studies
Case Study #1

Kenny
- 60 Year old Male
- Type 2 diabetes
- Recently started insulin
- Morbidly Obese
- Insurance – Medicare with QMB
- Lives in an SRO
Case Study #2

Mary

- 30 Year old Female
- Type 1 diabetes for 15 years
- Lives at the NHS shelter and sometimes outside eating at Soup Kitchen
- Hospitalized multiple times at CMC for Diabetic ketoacidosis (DKA)
- Insurance – Medicaid Managed Care
“Of all the forms of inequality, injustice in health care is the most shocking and inhumane.”

- Dr. Martin Luther King, Jr.
- in a speech to the Medical Committee for Human Rights, 1966
Q&A
Resources

Nutrition

Increasing Food Access
- [http://thefoodtrust.org/](http://thefoodtrust.org/)

Children and Youth
Contact Information

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