

The Epidemic of Obesity and Diabetes: Special Needs, Risks for Women

Jointly sponsored by The Dulaney Foundation and *Diabetic Microvascular Complications Today*.

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SUMMARY BASED ON PRESENTATIONS MADE BY FRANCES ASHE-GOINS, RN; JUDITH FRADKIN, MD, DDEMD/NIDDK; AND MICHELLE D. OWENS, PHD

STATEMENT OF NEED

Diabetes is the sixth leading cause of death in the United States and can result in other serious health problems and financial burdens for all people effected by this disease. Obesity contributes as a major risk factor. Of the more than 17 million Americans with diabetes, more than half are women. An additional 16 million people have prediabetes.

TARGET AUDIENCE

This activity is designed for nurses, primary care physicians and endocrinologists.

LEARNING OBJECTIVES

After successful completion of this program, the participant should be able to:

- discuss the gender-specific aspects of diabetes and obesity;
- describe the Diabetes Prevention Program;
- list some of the complications of diabetes;
- review the national agenda for public health action.

METHOD OF INSTRUCTION

Participants should read the learning objectives and CME program in their entirety. After reviewing the material, they must complete the self-assessment test, which consists of a series of multiple-choice questions.

Upon completing this activity as designed and achieving a passing score of 70% or higher on the self-assessment test,

participants will receive a CME credit letter awarding AMA/PRA category 1 credit and the test's answer key 4 weeks after the registration and evaluation materials are received.

The estimated time to complete this activity as designed is 1 hour.

ACCREDITATION

This activity has been planned and implemented in accordance with the essentials and standards of the ACCME through the joint sponsorship of The Dulaney Foundation and *Diabetic Microvascular Complications Today*.

DISCLOSURE

In accordance with the disclosure policies of The Dulaney Foundation and to conform with ACCME and FDA guidelines, all program faculty are required to disclose to the activity participants: 1) the existence of any financial interest or other relationships with the manufacturers of any commercial products/devices, or providers of commercial services, that relate to the content of their presentation/material or the commercial contributors of this activity, and 2) identification of a commercial product/device that is unlabeled for use or an investigational use of a product/device not yet approved.

FACULTY DISCLOSURE DECLARATIONS

None.

FACULTY CREDENTIALS

Frances Ashe-Goins, RN, is in the Department of Health and Human Services, Office of Women's Health. She is Deputy Director and Director of the Division of Policy and Program Development, located at 200 Independence Ave, SW, Rm. 728E, Washington, DC 20201. She can be reached at 202-690-6373; fax: 202-401-4005; e-mail: fashe-goins@osophs.dhhs.gov.

Judith Fradkin, MD, DDEMD/NIDDK is with the National Institutes of Health's Division of Diabetes, Endocrinology and Metabolic Diseases and the National Institute of Diabetes and Digestive and Kidney Diseases, 45 Center Dr, Room 5AN-12E MSC 6600, Bethesda, MD 20892. She can be reached at 301-594-8814; fax: 301-480-3503; e-mail: fradkinj@ep.niddk.nih.gov.

Michelle D. Owens, PhD, is in the Centers for Disease Control and Prevention, Division of Diabetes Translation, 4770 Buford Highway NE, Mailstop K-10 Atlanta, GA 30341. She can be reached at 770-488-5000; fax: 770-488-5966; email: diabetes@cdc.gov.

INTRODUCTION

Diabetes is a major public health problem in the United States, affecting over 17 million Americans. It is the leading cause of amputations, adult blindness and kidney failure. The cost of diabetes to the nation is \$132 billion. Over the past 10 years, the prevalence of diabetes has increased more than 50% and the Centers for Disease Control and Prevention (CDC) predicts that over the next 50 years, that number is going to increase by another 165%.

When these numbers are considered in the context of the general population, we see that the growth in the number of those with type 2 diabetes far outpaces the increase in the general population or in the working-age population. This is going to have a large economic impact on the health care system if the projected increase does not change.

The epidemic of diabetes in large part derives from the increase in obesity that has occurred in this country. Genetics too, are a major risk factor for type 2 diabetes. In the past decade, our genetics have not changed – what has changed is our lifestyle.

GENDER-SPECIFIC ASPECTS

National studies have shown that obesity is a major determinant of health-related quality of life in women throughout their lifespan. Abdominal obesity is associated with cardiovascular disease (CVD) in women, independent of body mass index (BMI), diabetes, hypertension or dyslipidemia.

Even after correcting for BMI, increased weight located abdominally still increases CVD risk threefold. After correcting for BMI, diabetes, hypertension and dyslipidemia, (the components of the metabolic syndrome) an increase in

abdominal girth raises CVD risk twofold.

Based on National Health and Nutrition Examination Survey (NHANES) 1999-2000 data, the prevalence of obesity is higher in women than men – 34% of women versus 27.7% of men were obese. When you look then at people with a BMI >40, the disparity is even larger; 6.3% of women versus 3.1% of men.

The prevalence of obesity is higher among women than men, and more African-American women than white women are obese.

More African-American women than white women are obese. Fifteen percent of African-American women have class 2 obesity. This is a threefold increase in this extreme form of obesity compared with non-Hispanic white women or Mexican-American women. That may partially account for the fact that African-Americans are the only group with a higher prevalence of diabetes in women than in men.

The actual prevalence of diabetes in women at any given age is similar to that of men. However, the CDC has recently reported that, the implications for women are more severe due to the fact that women live longer.

DIABETES PREVENTION PROGRAM

The Diabetes Prevention Program was a randomized clinical trial conducted at 27 sites throughout the United States. Patients were assigned to a conventional lifestyle information group, an intensive lifestyle approach group that encouraged participants to lose 7% of their body weight and to walk for half an hour 5 days a week, or a third group that received the drug metformin.

The study was designed to reflect the entire US population, and about two-thirds of the patients were women. Minority populations were recruited who are disproportionately affected by diabetes; all age groups were studied.

There was a dramatic reduction in the risk of developing diabetes in the group that received intensive lifestyle intervention compared with the group that received conventional lifestyle information. The group that received metformin was somewhere in the middle. The patients were followed for <3 years. Investigators saw a 58% reduction in the risk of developing diabetes with intensive lifestyle intervention. In contrast, the standard lifestyle developed diabetes at a rate of 11% per year.

DIABETES AND CHILDREN

For African-American and Mexican-American youth, the prevalence of overweight dramatically increased in just over a 10-year period, according to NHANES data. This was true

for both boys and girls.

If women develop diabetes prior to having children, their offspring will be at increased risk. This is not only because of the genetic risks they inherit from their mothers, but also because an imprinting phenomenon. Being in the womb of a woman with diabetes appears to increase the risk of diabetes in the offspring, independent of the genetic risk from that mother.

Latinos have the highest rates of diabetes in the country. Among Latinos with nondiabetic mothers, their rates of diabetes are relatively low. However, among those whose mothers were diabetic during pregnancy, by the time offspring are in their mid-20s, the risk is dramatically increased.

COMPLICATIONS

Many studies have shown dramatically increased risks of CVD in people with diabetes. These risks are even greater for women, because the baseline risk, particularly for premenopausal women, is much lower.

Diabetes is a coronary artery disease (CAD) risk – patients who have diabetes are at the same risk for myocardial infarction (MI) as somebody who has already had a MI. Women with diabetes lose their gender protection. The rates of CVD are equal in men and women with diabetes, as opposed to the differences in the population without diabetes.

In addition to CAD, claudication is increased substantially in patients with diabetes. After a myocardial event, mortality is substantially increased in patients with diabetes. A study that looked at long-term follow up from NHANES cohorts showed that, although CVD mortality is decreasing in the general population, it appears to be staying stable in men with diabetes and increasing in diabetic women. One reason for this may be that diabetic women often do not consider themselves to be as much at risk for CVD as men.

SOCIAL, CULTURAL, ECONOMIC TRENDS

Women face increased risk for diabetes and its complications because of certain social, cultural and economic trends. National surveys have indicated that since the 1970s, there are increasing trends in the number of women who live in poverty, who work in small companies that provide very few benefits, who are uninsured, and who lack access to health care. Approximately one in seven women lack access to health insurance.

Many women are overweight and do not exercise on a regular basis. About half of women aged ≥ 20 years are overweight, and $>25\%$ do not participate in any leisure-time physical activity. Public health campaigns to reduce obesity and type 2 diabetes have largely focused on increasing exercise levels, but have paid little attention to the reduction of sedentary behaviors.

Diabetes Numbers to know...

1 IN 10 PEOPLE DON'T KNOW THEY HAVE DIABETES BY THE NUMBER OF TESTS THEY GET BY VISITING A PHYSICIAN.
 SOURCE: CDC NATIONAL DIABETES SURVEY (NIDDM) 2005-2006. (CDC) 2006.

Tests	Target	How Often?
A1C (glycosylated hemoglobin)	Below 7%	At least once a year
Blood Pressure	Below 130/80	At least once a year
Cholesterol (LDL)	Below 100	At least once a year

*In 50% of 7 people an average blood glucose of 150.

Need help?

- American Association of Endocrinology & Metabolic Diseases
1-800-828-6864
www.aaed.org
- American Diabetes Association
1-800-545-7539
www.diabetes.org
- American Diabetes Association
1-800-458-7539
www.diabetes.org
- American Heart Association
1-800-541-2273
www.heart.org
- Endocrine Society
1-800-541-2273
www.endocrine.org
- National Heart, Lung, and Blood Institute
1-800-368-6968
www.nhlbi.nih.gov
- National Institute of Diabetes and Digestive and Kidney Diseases
National Diabetes Information Clearinghouse
1-800-462-2767
www.niddk.nih.gov

The National Diabetes Education Program is a joint program of the National Institutes of Health and the Centers for Disease Control and Prevention. Website: www.ndep.nih.gov. Phone: 1-888-488-6321. NIDDK-51 November 2004.

Be Smart About Your Heart, Control the ABCs of Diabetes

No discrimination will be made on the basis of race, ethnicity, or national origin in the provision of services.

American Diabetes Association

Figure 1. National Diabetes Education Program materials: Be Smart About Your Heart, Control the ABCs of Diabetes.

The Women's Health Study has shown a very strong correlation between sedentary behavior and diabetes. There is an estimated 14% increase for every additional 2 hours of television watching per day. The Nielsen ratings show that women watch on average about 5 hours more TV per week than men. Men watch on average about 29 hours per week, women about 34 hours per week. Compared with other sedentary activities such as sewing, playing board games, reading and writing, TV watching results in lower metabolic rates.

Exposure to food advertising results in increased food and calorie intake and unhealthy eating patterns. Thus, there is an association between constantly watching TV obesity risk. During a 6-year follow up, researchers documented 1,515 newly diagnosed cases of type 2 diabetes. After adjusting for age, the average time spent watching TV was specifically associated with increased risk for type 2 diabetes.

This study suggested that 30% of obesity cases and 43% of type 2 diabetes cases can be prevented by following an active lifestyle. There are three major concerns with time spent watching TV and risk for obesity and diabetes:

- TV watching displaces physical activity and reduces energy expenditure;
- TV watching results in increased food intake;
- and people who spend more time watching TV tend to have unhealthy eating patterns.

DIABETES A PRIORITY

Diabetes is a major priority issue for the Department of Health and Human Services. Diabetes intervention, prevention and control requires collective energies. It requires the support and action of the public, private and voluntary sectors. The CDC, along with its cosponsors, has developed the National Public Health Initiative on Diabetes and Women's Health.

The National Public Health Initiative on Diabetes and Women's Health has three phases. The first is to identify the concerns of women who have diabetes and those who are at risk. The second proposes recommendations for action. Eighty organizations from the public, private and voluntary sectors were invited to join in a task force meeting to identify what they found as being the major issues that need to be addressed for women with diabetes.

The third step is the implementation of the action plan, called the National Agenda for Public Health Action. The Diabetes and Women's Health Initiative is cosponsored by American Diabetes Association, American Public Health Association, Association of State and Territorial Health Officials, and the CDC.

NATIONAL AGENDA FOR PUBLIC HEALTH ACTION

The scope of the action plan is to prevent or delay diabetes whenever possible, and to provide women with the support they need in dealing with diabetes. The plan involves promoting appropriate care and preventing, delaying and minimizing complications.

The National Agenda for Public Health Action requires collaboration with many partners. It is an action plan that will mobilize diverse organizations to use their

resources to make a difference.

One goal is to garner the attention of multiple sectors of society. Priority strategies, policies and research will need to be developed. The partners will need to unite for diabetes prevention and control. One of the most important goals is to make sure that women are empowered to adopt prevention strategies.

Diabetes has a major impact on women across all life stages. It is not an issue just for one age group, but for all age groups, from adolescence to the older years.

CHALLENGES THROUGH THE LIFE STAGES

Some of the challenges for the adolescent years is that there is a lack of educational material for this age group, as well as a lack of awareness of the need for weight control. Teens also have many options for fast food and insufficient recreational activities available at school and in after-school programs.

Challenges for the reproductive years include barriers to self care. Women in this age group are dealing with raising young children, in addition to sometimes taking care of their parents. There could be limited time for physical activity and healthy eating. Weight gain during pregnancy can also increase the risk for a type 2 diabetes later on in life, if obesity becomes a concern.

The challenges for the middle years are very similar to those in the reproductive years. There are needs of children, grandchildren and aging parents that may take precedence over women's own needs.

Older people are vulnerable to other chronic illnesses, such as depression. They may become disabled, experience poverty, urinary incontinence, injurious falls and as well as pain. All of this needs to be taken into account when diabetes issues are addressed for this age group.

The action plan has four major areas: The need for more advocacy and policies for women with diabetes and those at risk; services and programs; communication and education; and the need for more research and surveillance.

There are 10 major steps for action (Table 1). The first is to strengthen advocacy for women with diabetes and those at risk. There is a need to expand community-based promotion, activities and incentives in a variety of health care settings. There is also a need to encourage and support our states who are working with diabetes prevention and control. Community programs need to be fortified with the tools that they need to make a difference.

Population-based surveillance needs to be expanded, community leaders need to be educated about diabetes and its risks, risk assessment needs to be encouraged along with quality care in health care settings, and access to quality services must be ensured. ■

TABLE 1. 10 MAJOR STEPS FOR ACTION IN THE NATIONAL PUBLIC HEALTH INITIATIVE ON DIABETES AND WOMEN'S HEALTH

1. Strengthen advocacy
2. Expand community-based health promotion
3. Encourage and support diabetes prevention and control programs
4. Fortify community programs
5. Expand population-based surveillance
6. Educate our community leaders
7. Encourage risk assessments, quality care in health care settings
8. Ensure access to quality services
9. Encourage health care coverage
10. Conduct public health research

CME QUESTIONS

Circle the most appropriate answer in the "ANSWER SECTION" on the following page.

1. **Abdominal obesity is associated with CVD in women:**
 - a. even after correcting for BMI
 - b. independent of diabetes
 - c. independent of hypertension
 - d. all of the above
2. **According to NHANES 1999-2000, the prevalence of obesity is:**
 - a. higher in women vs men, 34% and 27.7% respectively
 - b. about the same in both women and men, 31%
 - c. higher in women vs men, 22% and 18%
 - d. higher in men vs women, 34% and 27.7% respectively
3. **Rates of obesity in African-American women are not as high as those in white women.**
 - a. True
 - b. False
4. **The Diabetes Prevention Program found that:**
 - a. intensive lifestyle intervention worked about as well as the standard lifestyle approach
 - b. medication did nothing to prevent diabetes
 - c. intensive lifestyle intervention dramatically reduced the risk of developing diabetes
 - d. none of the interventions in the trial were successful
5. **Regarding diabetes, obesity and children:**
 - a. the offspring of women with diabetes are not more likely to develop the disease
 - b. children are about the same weight that they were 10 years ago, overall
 - c. diabetes is not genetically inherited
 - d. African-American and Mexican-American youth are heavier than they were 10 years ago
6. **Regarding CVD and diabetes:**
 - a. women with diabetes are protected against developing CVD because of their gender
 - b. having diabetes confers the same CVD risk as having had a previous MI
 - c. The rates of CVD are equal in men and women with out diabetes
 - d. there is no connection between diabetes and CVD
7. **A sedentary lifestyle is a risk factor for diabetes. TV watching makes people less active.**
 - a. Women watch 5 hours more TV per week than men.
 - b. Men and women watch about the same amount of TV.
 - c. Men watch 5 hours more TV per week than women.
 - d. Women watch 8 hours more TV per week than men.
8. **Which of the following is NOT a way in which television watching contributes to obesity?**
 - a. Spending time watching TV displaces physical activity.
 - b. People often eat more when they watch TV.
 - c. People who watch TV often have unhealthy eating habits.
 - d. Watching TV encourages fat cells to multiply and store carbohydrates.
9. **Which of the following is NOT a cosponsor of the Diabetes and Women's Health Initiative?**
 - a. American Diabetes Association
 - b. The Centers for Disease Control and Prevention
 - c. Weight Watchers
 - d. American Public Health Association
10. **Which of the following was NOT a challenge discussed in the activity as a barrier for women to take proper care of themselves when it comes to diet and exercise?**
 - a. They may have limited time for physical activity.
 - b. Weight gain during pregnancy may be a concern.
 - c. They may be caring for their children and their own parents.
 - d. They may not belong to a gym.

REGISTRATION/EVALUATION FORM: OBESITY AND DIABETES IN WOMEN

To obtain AMA/PRA category 1 credit, you must:

- Read the learning objectives and the CME article and complete the self-assessment test.
- Photocopy and complete this registration/evaluation form and record your test answers in the Answer Section below.
- Send the Registration/Evaluation form to **The Dulaney Foundation, Post Office Box 25271, Tampa, FL 33622-5271, or fax to 813-258-8002.**
- Retain a copy of your test answers. Your answer sheet will be graded, and if you achieve a passing score of 70% or better, you will receive a CME credit letter awarding AMA/PRA category 1 credit as well as the test answer key by mail within 4 weeks. If you do not achieve a passing score, you will be notified and offered the opportunity to complete the activity again.

ANSWER SECTION

Circle the best answer for each question on page 41.

1. A B C D 2. A B C D 3. A B 4. A B C D 5. A B C D
6. A B C D 7. A B C D 8. A B C D 9. A B C D 10. A B C D

REGISTRATION FORM

First name _____ Last name _____ Degree (MD, PhD) _____

Specialty _____

Institution or practice name _____

Address _____

City _____ State _____ Zip Code _____ Country _____

Telephone _____ Fax _____ E-mail address _____

The processing fee has been underwritten by an unrestricted educational grant from Eli Lilly and Company.

I attest that I have completed this activity as designed and I am claiming _____ (up to 1 credit) AMA/PRA category 1 credit.

Signature _____ Date _____

Credit for this activity is available until January 31, 2006.

The planning and execution of useful and educationally sound continuing education activities are guided in large part by input from participants. Please assist us in evaluating the effectiveness of this activity and make recommendations for future educational offerings by completing this evaluation form. Your response will help ensure that future programs are informative and meet the educational needs of all participants. Please note: CME credit letters and long-term credit retention information will only be issued upon receipt of this completed evaluation. Thank you for your cooperation.

OBJECTIVES

After successful completion of this program, you should be able to:

- | | | | | | |
|--|---|---|---|---|---|
| • discuss the gender-specific aspects of diabetes and obesity. | 5 | 4 | 3 | 2 | 1 |
| • describe the Diabetes Prevention Program. | 5 | 4 | 3 | 2 | 1 |
| • list some complications of diabetes. | 5 | 4 | 3 | 2 | 1 |
| • review the national agenda for public health action. | 5 | 4 | 3 | 2 | 1 |

(Please circle the number that is most accurate; 5 represents strongly agree and 1 represents strongly disagree.)

OVERALL EVALUATION

- | | | | | | |
|--|---|---|---|---|---|
| • The information presented increased my awareness/understanding of the subject. | 5 | 4 | 3 | 2 | 1 |
| • The information presented will influence how I practice. | 5 | 4 | 3 | 2 | 1 |
| • The information presented will help me improve patient care. | 5 | 4 | 3 | 2 | 1 |
| • The faculty demonstrated current knowledge of the subject. | 5 | 4 | 3 | 2 | 1 |
| • The program was educationally sound and scientifically balanced. | 5 | 4 | 3 | 2 | 1 |
| • The program avoided commercial bias or influence. | 5 | 4 | 3 | 2 | 1 |
| • Overall, the program met my expectations. | 5 | 4 | 3 | 2 | 1 |
| • I would recommend this program to my colleagues. | 5 | 4 | 3 | 2 | 1 |

(Please circle the number that is most accurate; 5 represents strongly agree and 1 represents strongly disagree.)

• If you anticipate changing one or more aspects of your practice as a result of your participation in this activity, please provide a brief description of how you plan to do so: _____

• Please provide any additional comments pertaining to this activity (positive and negative) and suggestions for improvements: _____

• Please list any topics you would like to see addressed in future educational activities: _____