

# Women at High Risk for Diabetes:

## Physical Activity, Healthy Eating, and Weight Loss



### Why Should Women Care About Diabetes?

- Diabetes is a group of diseases marked by high levels of blood glucose resulting from defects in insulin production, insulin action, or both. Diabetes can lead to serious complications and premature death.<sup>1</sup>
- The most common forms of diabetes are as follows
  - » **Type 1 diabetes** accounts for about 5% of all diagnosed cases of diabetes. Type 1 is usually diagnosed in children and young adults, although it can occur at any time. People with type 1 diabetes must use insulin from an injection or a pump to manage their diabetes.<sup>1</sup>
  - » **Type 2 diabetes** accounts for about 95% of all cases diagnosed in adults. Several studies have shown that healthy eating, regular physical activity, and weight loss used with medication if prescribed, can help control complications from type 2 diabetes or can prevent or delay the onset of type 2 diabetes.<sup>1</sup>
  - » **Gestational diabetes** is diagnosed in 2%–10% of pregnant women.<sup>2</sup> Gestational diabetes can cause health problems during pregnancy for both the child and mother. Children whose mothers had gestational diabetes have an increased risk of developing obesity and type 2 diabetes.<sup>3</sup> Although gestational diabetes often goes away after pregnancy, about half of all women who have gestational diabetes get type 2 diabetes later in life.<sup>4</sup>
- It is estimated that 12 million women aged 20 years and older have diabetes, and approximately 27 million have prediabetes.<sup>1,5-7</sup>

### How Can Women Tell If They Are at High Risk for Diabetes?<sup>8</sup>

#### Women are at high risk for diabetes if they

- Are overweight (body mass index of 25 kg/m<sup>2</sup> or greater) and have one or more additional risk factors, such as
  - » Low physical activity (less than 150 minutes of moderate-intensity activity, such as walking, per week).
  - » Family history of type 2 diabetes.
  - » High-risk race/ethnicity (African American, American Indian or Alaska Native, Asian American, Hispanic or Latino, Native Hawaiian or Pacific Islander).
  - » Had a baby weighing 9 pounds or more or were diagnosed with gestational diabetes.
  - » High blood pressure (140/90 mmHg or higher).
  - » High cholesterol (240 mg/dL or higher).
  - » History of polycystic ovarian syndrome, a health problem that can affect a woman's hormones, menstrual cycle, and ability to have children.

- » Clinical conditions associated with insulin resistance, such as severe obesity, or the development of dark, thick skin in body folds and creases (a condition which is called ‘acanthosis nigricans’).
- » History of cardiovascular disease.
- Have prediabetes.

## What Can Be Done to Reduce the Risk of Developing Type 2 Diabetes?

**Research has shown that the following lifestyle modifications can prevent, or at least delay the onset of type 2 diabetes among people at risk of diabetes**<sup>9-12:</sup>

- Eating fewer high fat and high calorie foods.
- Losing at least 5%–7% of body weight, if overweight or obese.
- Being physically active for 150 minutes every week.

## How Well Are Women At High Risk for Diabetes Doing?

**A study of women at high risk for diabetes indicated that**<sup>13</sup>

### Physical Activity

- Only 1 of 4 women at high risk for diabetes reported that they exercised 150 minutes of moderate-intensity activity (such as walking) per week.
- No evidence was found that women at high risk for diabetes of different races/ethnicities, educational attainment, or household income differed in how likely they were to be physically active for 150 minutes per week.

### Healthy Eating

- 90% of obese Mexican American women with high cholesterol reported that they were advised by their health care provider to eat fewer high-fat or high cholesterol foods; only 78% of non-Hispanic whites were given the same advice.
- There were no significant differences by education among obese women who were given advice about eating fewer high-fat or high-cholesterol foods.
- Only 76% of obese women with middle income (200%–399% of Federal Poverty Level [FPL]) reported that they received advice to eat fewer high-fat or high cholesterol foods; 82% of high income (400% or more FPL) obese women reporting that they received this advice.



### Weight Loss

- Only 50% of non-Hispanic black and Mexican American women at high risk for diabetes reported trying to lose weight in the past 12 months compared to 60% of non-Hispanic white women at high risk for diabetes.
- Women at high risk for diabetes with a high school education (57%) or less (47%) were less likely than women at high risk for diabetes with more than a high school education (63%) to report that they tried to lose weight in the past 12 months.
- 1 of 2 women at high risk for diabetes who were near poor (100%–199% FPL) or poor (<100% FPL) reported trying to lose weight in the past 12 months; whereas 1 of 3 women from high income families reported trying to lose weight in the past 12 months.

**To Learn More about Diabetes, Physical Activity, Healthy Eating, and Weight Loss, Please Visit the Following Web Sites:**

### Diabetes

Centers for Disease Control and Prevention  
National Diabetes Education Program  
American Diabetes Association

### Physical Activity

Physical Activity: How Much Physical Activity do you Need?

### Healthy Eating

Nutrition for Everyone

### Weight Loss

Healthy Weight: It's Not a Diet, It's a Lifestyle

<sup>1</sup>Centers for Disease Control and Prevention. National Diabetes Fact Sheet: National Estimates and General Information on Diabetes and Prediabetes in the United States, 2011. Atlanta, GA: US Department of Health and Human Services; 2011.

<sup>2</sup>Hunt KJ, Schuller KL. The increasing prevalence of diabetes in pregnancy. *Obstet Gynecol Clin North Am.* 2007;34:173-199.

<sup>3</sup>Dabelea D, Crume T. Maternal environment and the transgenerational cycle of obesity and diabetes. *Diabetes Care.* 2011;60:1849-1855.

<sup>4</sup>Kitzmler JL, Dang-Kilduff L, Taslimi MM. Gestational diabetes after delivery: short-term management and long-term risks. *Diabetes Care.* 2007;30:5225-5235.

<sup>5</sup>Cowie CC, Rust KF, Ford ES, et al. Full accounting of diabetes and prediabetes in the U.S. population in 1988–1994 and 2005–2006. *Diabetes Care.* 2009;32:287-294.

<sup>6</sup>US Department of Commerce. Age and Sex Composition: 2010. Washington, DC: US Census Department; 2010. Issued May 11. Available at: <http://www.census.gov/prod/cen2010/briefs/c2010br-03.pdf>.

<sup>7</sup>Centers for Disease Control and Prevention. *Diabetes Report Card 2012: National and State Profile of Diabetes and its Complications.* Atlanta, GA: US Department of Health and Human Services; 2012.

<sup>8</sup>American Diabetes Association. Standards of medical care in diabetes—2012. *Diabetes Care.* 2012;35(Suppl 1):S11-S63.

<sup>9</sup>Saito T, Watanabe M, Nishida J, et al. Lifestyle modification and prevention of type 2 diabetes in overweight Japanese with impaired fasting glucose levels. *Arch Intern Med.* 2011;171:1352-1360.

<sup>10</sup>Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *NEJM.* 2002; 346: 393-403.

<sup>11</sup>Pan XR, Guang-Wei L, Ying-Hua H, et al. Effect of diet and exercise in preventing NIDDM in people with impaired glucose tolerance: the Da Qing IGT and diabetes study. *Diabetes Care.* 1997; 20:537-544.

<sup>12</sup>Tuomilehto J, Lindström. Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *NEJM.* 2001; 344:1343-1349.

<sup>13</sup>U.S. Department of Health and Human Services. Women at High Risk for Diabetes: Access and quality of health care, 2003–2006. Agency for Healthcare Research and Quality and Centers for Disease Control and Prevention. 2011. AHRQ Publication No. 11-002.