



## **Key Facts on Women and Diabetes**

Over 246 million people worldwide suffer from diabetes, 122 million of whom are women. This number is expected to rise to 192 million by the year 2025.<sup>1</sup> While the ratio of men-to-women afflicted with diabetes is roughly equal, women are uniquely, and often more severely, affected by the complications of diabetes.

### **PREVALENCE & MORTALITY**

- The diabetes epidemic is growing most rapidly in developing nations, and particularly in South Asian countries, including India and Bangladesh.<sup>2</sup>
- In developed nations, minorities are at the highest risk for developing diabetes and subsequent complications. In the United States, prevalence is two to four times higher among minority populations.<sup>3</sup>

### **COMPLICATIONS & COMORBIDITY**

- The risk of death from coronary heart disease is 50% higher for women with diabetes compared to men with diabetes, a statistic that increases dramatically if the woman is also a smoker.<sup>4</sup>
- Diabetes doubles the risk of mortality for both men and women with peripheral arterial disease.<sup>5</sup>
- The risk of diabetic ketoacidosis (DKA), or diabetic coma, is 50% higher among women than men.<sup>6</sup>
- Women with diabetes experience sexual dysfunction, such as a significant decrease in vaginal lubrication, sexual desire, and orgasm, and increases dyspareunia.<sup>7</sup>
- The odds of developing depression are consistently and significantly higher in women with diabetes than in men.<sup>8</sup>
- Diabetes accounts for 44% of new cases of kidney failure in the United States.<sup>9</sup>

### **DIABETES & PREGNANCY**

- The prevalence of diabetes during pregnancy is as high as 30% among high-risk populations.<sup>10</sup>
- During pregnancy, women with diabetes have a higher risk of vascular complications. Pre-existing vascular complications may also worsen.
- Retinopathy (damage to the retina) does worsen during the course of pregnancy. Diabetic retinopathy may also worsen for weeks following the pregnancy.<sup>11</sup>
- Women with gestational diabetes mellitus (GDM) are 40% to 60% more likely to develop diabetes in the 5-10 years following their pregnancy.<sup>12</sup>
- Recent randomized controlled studies have proven that not treating GDM is associated with poor pregnancy outcome.<sup>13, 14</sup>
- It is expected that the HAPO study will potentially provide a lower threshold to define GDM and will set a new worldwide accepted criteria for both GDM screening and diagnosis.<sup>15</sup>
- Women with GDM are at greater risk of delivering high-birth weight babies (macrosomia), which also may result in greater risk of fistula, hemorrhaging, infection, and possible death.
- Undiagnosed and untreated diabetes during pregnancy may also severely compromise fetal development, and may lead to congenital malformation, still birth, and intrauterine death.

### **DIABETES & EYE CARE**

- Diabetes poses an increased risk for the formation of cataracts. Increased glucose levels also lead to increased risk of cortical cataract.<sup>16</sup>
- Men and women with diabetes are 60% more likely to develop cataracts and 40% more likely to suffer from glaucoma than those without diabetes.<sup>17</sup>
- Diabetes is the leading cause of new cases of blindness among adults 20-74 years old in the United States, causing 12,000-24,000 cases of new blindness every year.<sup>18</sup>



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## TREATMENT & CARE

- Diabetes screening for pregnant women in resource-poor countries is often unavailable, eliminating the possibility of access to care and treatment.
- Women with diabetes are routinely offered less-aggressive treatment and interventions for comorbid symptoms than men.<sup>19</sup>
- In many developing nations, women in traditional families are often denied medical care if the physician is male, even if their situation is life-threatening.<sup>20</sup>

## SOCIAL & CULTURAL CONSIDERATIONS

- A woman is often the primary family caregiver, assuming the responsibility of a family member's disease management.
- Women demonstrate higher social involvement in rural, developing communities. Their shared cultural knowledge regarding diabetes care is much higher than men, whether or not they suffer from diabetes.<sup>21</sup>
- Women with diabetes can be faced with the stigma of being considered undesirable mates, and will often be rejected as wives due to the disease.<sup>22</sup>

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<sup>1</sup> Diabetes Atlas 3<sup>rd</sup> Edition, International Diabetes Federation. 2006: 5.

<sup>2</sup> Ghaffar, Abdul, et al. "Burden of non-communicable diseases in South Asia." *BMJ* 328 (2004): 807-10.

<sup>3</sup> United States Department of Health and Human Services Centers for Disease Control and Prevention (CDC).

<http://www.cdc.gov/women/natstat/Diabetes.htm>

<sup>4</sup> Huxley, Rachel, et al. "Excess risk of fatal coronary heart disease associated with diabetes in men and women: meta-analysis of 37 prospective cohort studies." 21 Dec. 2005. *BMJ* group. 9 Sept. 2008.

<sup>5</sup> Leibson, Cynthia L., et al. "Peripheral Arterial Disease, Diabetes, and Mortality." *DiabetesCare* 27 (2004): 2843-849.

<sup>6</sup> United States population studied. <http://www.fda.gov/WOMENS/taketimetocare/diabetes/fswomen.html>

<sup>7</sup> Grandjean, Cindy, et al. "The Impact of Diabetes Mellitus on Female Sexual Well-Being." *Nursing Clinics of North America* 42 (2007): 581-92.

<sup>8</sup> Owens, Michelle, et al. "Diabetes and Older Women: What's Depression Got to Do with It?" *American Society on Aging*. Winter, 2008) [http://www.asaging.org/asav2/nest/enews/08winter/chronic\\_conditions.cfm](http://www.asaging.org/asav2/nest/enews/08winter/chronic_conditions.cfm)

<sup>9</sup> Ibid.

<sup>10</sup> "Diabetes, Women, & Development." *GAWH Expert Meeting Summary*. 2008: 3

<sup>11</sup> *Ocular changes in pregnancy*. Dinn, RB, Harris, A, Marcus, P. *Ostetrical and Gynecological Survey*. CME Review Article. 2003; 58(2):137-144.

<sup>12</sup> *National Diabetes Fact Sheet, 2007*. Rep.No. United States Department of Health and Human Services, Centers for Disease Control and Prevention.

<sup>13</sup> Crowther CA, Hiller JE, Moss JR, McPhee AJ, Jeffries WS, Robinson JS; Australian Carbohydrate Intolerance Study in Pregnant Women (ACHOIS) Trial Group. Effect of treatment of gestational diabetes mellitus on pregnancy outcomes. *N Engl J Med* 2005; 352: 2477-2486.

<sup>14</sup> Landon MB, Shriver EK for the MFMU. A prospective multicenter randomized treatment trial of mild gestational diabetes (GDM). *AJOG* 2009 199(6): Supp (A): S2 (Abstract)

<sup>15</sup> HAPO Study Cooperative Research Group. Hyperglycemia and adverse pregnancy outcomes. *N Engl J Med*. 2008; 358(19):1991-2002.

<sup>16</sup> Tan, JS, Wang, JJ, Mitchell, P. Influence of diabetes and cardiovascular disease on the long-term incidence of cataract: the Blue Mountains eye study. *Ophthalmic Epidemiology*. 2008; 15(5): 317-327.

<sup>17</sup> "Eye Complications." American Diabetes Association. 12 Sept. 2008 <<http://www.diabetes.org/home.jsp>>.

<sup>18</sup> *National Diabetes Fact Sheet, 2007*. Rep.No. United States Department of Health and Human Services, Centers for Disease Control and Prevention.

<sup>19</sup> Legato, Marianne, et al. "Gender-Specific Care of the Patient with Diabetes: Review and Recommendations." *Gender Medicine* 3 (2006): 131.

<sup>20</sup> Joshi, Shashank R, et al. "India- Diabetes Capital of the World: Now Heading Towards Hypertension." Editorial. *JAPI* May 2007: 323-24.

<sup>21</sup> Daniulaityte, Raminta. "Making sense of diabetes: cultural models, gender, and individual adjustment to Type 2 diabetes in a Mexican Community." *Social Science & Medicine* 59 (2004): 1899-912.

<sup>22</sup> Mahtab, Hajera. "Rural Women: The Bangladesh Perspective." *DiabetesVoice* 47 (2002): 49-51.