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Diabetes is a very serious illness and too many people are neglecting their condition. Approximately one-third of the 15.7 million Americans who are estimated to have diabetes are unaware of their condition. Diabetes is the seventh leading cause of death in the U.S. and a major cause of stroke and heart disease. It is also a principal cause of non-traumatic lower limb amputations, kidney failure, and new cases of blindness among adults in the U.S. Uncontrolled diabetes can lead to ketoacidosis which can cause a diabetic coma.¹ Across every age group in America, women are more affected by diabetes than men, with respect to prevalence of both the disease and its complications. More women than men have diabetes, and prevalence is particularly high among minority ethnic groups. According to a recent study, African Americans, Hispanics, Native Americans and Asian Pacific Islanders are two to four times more likely to have Diabetes than white Americans. Recent studies also indicate that 90-95% of women with diabetes are afflicted by type-2. Women especially, across all ethnic groups, are at risk for gestational diabetes, which not only endangers the mother's health but the child's as well.²

Diabetic women face many challenges when trying to live with this illness. One in particular is that they are more likely to have an eating disorder. Generally, women in America are under constant pressure to adhere to society's ideals of beauty, which includes being thin, dieting and losing weight. Since many people with diabetes tend to be overweight, women especially will be more likely to try extreme fad diets. Surveys have illustrated that many women have admitted to manipulating their insulin intake to lose weight.³ Taking less insulin than prescribed in order to rapidly lose weight puts them at

¹U.S. Department of Health and Human Services, CDC, 2011

²American Public Health, 2011

³Joslin Diabetes Center, 2011

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risk for uncontrolled high blood sugar levels, which leads to diabetic complications⁴. When they decrease their insulin, they think they've lost weight but they're losing mostly water and become dehydrated. When they start taking it normally again, the body gains water quickly to make up for the dehydration and it seems as though they've gained a lot of weight. Alternatively, taking less insulin can make them feel hungrier because the body is not able to absorb all of the nutrients in food so the body needs more food and if they don't eat more, weight loss will occur but it's not healthy weight loss, it's malnutrition (essentially starving your body). Using the right amount of insulin allows the body to absorb the nutrients from food, so weight is gained naturally.

Another issue is that females are more prone to weight gain because female hormones promote the storage of fat, so women naturally have about twice as much body fat as men. Women also naturally have less muscle than men and that causes a higher level of natural body fat.⁵ Since women in American society tend to play the role of caregivers, the added stress of working and taking care of family can lead to weight gain. Women with diabetes need dynamic and nutritious diet plans to keep their blood sugar and weight down. Intensive insulin therapy will cause some weight gain, so women with this regimen of treatment must change their diet accordingly to compensate. Skipping meals (a common mistake for people who want to lose weight) causes weight gain because it decreases the body's metabolic rate so the body becomes efficient at storing calories as fat instead of burning them in order to ensure that energy will be present the next time a meal is skipped. Very low-calorie diets cause the body to adapt to being staved as well so metabolism slows and when a normal diet is resumed, weight gain will occur very quickly.

⁴CDC, 2011 (ref. 1)

⁵Joslin Diabetes Center, 2011

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According to set-point weight theory, the body naturally goes back to one individual set weight constantly, and this 'default' weight increases with age.⁶ It can be lowered by regular exercise and paying more attention to the quality, rather than the quantity, of food in the diet. Diets tend not to work for people unless they are individualized and personalized. If a diet is unappetizing, the person won't follow it, resorting to unhealthy habits again. So, diabetics should consult a nutritionist to create personalized dietary guidelines which take into account individual cultural backgrounds and lifestyles.

An issue with diabetic women and their healthcare is that there tends to be more focus upon gestational diabetes and not enough attention is paid to other problems affecting diabetic women. The most common complication for people with diabetes is heart disease, and women are more at risk for this complication than men. Premenopausal women have some natural protection against ischemic heart disease but premenopausal women with diabetes do not. Within the group of diabetics who develop ischemic heart disease, women have lower survival rate and quality of life than men. Blindness due to diabetes is also more common in women than in men. The diabetic risk factors, such as lack of physical activity, weight gain, and obesity, are more common in women.⁷

Along with genetic factors of heredity relating to immunity, ethnic minorities are more likely to have diabetes due to other factors such as socioeconomic status affected by poverty, education, limited access to healthcare, and cultural and behavioral factors that counteract diabetes management and prevention.⁸ Among diabetic adolescents (ages 10-19), retinopathy and nephropathy is more common in females than males. In this age

⁶Joslin Diabetes Center, 2011

⁷Beckles GLA, Thompson-Reid PE, 2011

⁸CDC, 2011 (ref. 2)

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group, females are also very susceptible to developing eating disorders, such as anorexia and bulimia, as well as manipulating insulin intake to lose weight. They also experience higher morbidity and mortality rates than diabetic adolescent males.⁹ For women of reproductive age (20-44), main concerns have to do with pregnancy. Gestational diabetes poses a health risk for both mother and child, not only due to high blood glucose, hypertension, and the health risks associated but there is also an increased risk that the child will be very large and the mother will need a C-section. Children born to mothers with gestational diabetes have a higher risk of being born with diabetes as well or of becoming overweight and developing diabetes later in life.¹⁰

Middle-aged women (45-64) have unique issues because this is the time period when chronic disease becomes common. Weight gain becomes an issue because metabolism begins to slow down and the average person's activity level decreases at this age. People also tend to have more medications for different diseases, causing different side-effects, and are more accepting of medication increases than lifestyle changes. The common complications most affecting this age group are hyperlipidemia, coronary heart disease, and hypertension, which are all increase in severity with smoking habits. Elderly women (65-74) commonly have major risk factors for diabetes, including weight gain, obesity, and decreased physical activity, which become expected with limited mobility. Age puts this group at greater risk for diabetic complications and diabetes is a leading cause of death for women in this age group. Elderly women are also more likely to be hospitalized due to diabetes than younger women or elderly men. This may be due to the fact that 40% of elderly diabetic women live alone, which means they lack social support for their health

⁹Beckles GLA, Thompson-Reid PE, 2011

¹⁰National Diabetes Information, 2006

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maintenance, which may contribute to ill-health. Elderly women are also twice as likely to live in poverty as elderly men, which may limit access to healthcare and promote ill-health. Additionally, noncompliance with treatment or preventive measures for diabetes is common in this age group. Reasons for this may include that elderly women tend to have lower education levels than younger women and elderly men. Disabilities, such as sensory and cognitive deterioration, can contribute to a person's inability to follow a course of treatment/prevention. Traditional beliefs about illness, the control over health and self-care practices are important to consider when giving patients a regimen for treatment/prevention, especially since cultural beliefs are well-ingrained and the elderly especially have difficulty modifying their behaviors and it may prove to be a barrier and contribute to noncompliance.¹¹

Overall, complications due to diabetes include heart disease and stroke, blindness and retinopathy, kidney failure and nephropathy, hypertension, neuropathy, amputations, complications during pregnancy, periodontal disease, lowered immunity, limited mobility in the elderly, and depression.¹² In the general population, women are more susceptible to depression than men so diabetic women are even more at risk. According to recent studies, women with concurrent diabetes and depression are at risk for increased mortality and morbidity due to heart disease. Concurrent depression and diabetes has been linked to unhealthy behaviors such as a sedentary lifestyle, smoking, and poor diet and exercise.¹³

¹¹Beckles GLA, Thompson-Reid PE, 2011

¹²U.S. Department of Health and Human Services, CDC, 2011

¹³JAMA and Archives Journals, 2011

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