Diabetes Essay, Research Paper

What is diabetes?

Diabetes mellitus is a group of diseases characterized by high levels of blood glucose resulting from defects in insulin secretion, insulin action, or both. Diabetes can be associated with serious complications and premature death, but persons with diabetes can take measures to reduce the likelihood of such occurrences. 15.7 million people — 5.9% of the population — have diabetes. But only 10.3 million people are diagnosed so that leaves 5.4 million people not diagnosed.

Studies have found death rates to be twice as high among middle-aged people with diabetes as among middle-aged people without diabetes. Based on death certificate data, diabetes contributed to 193,140 deaths in 1996. Diabetes was the seventh leading cause of death listed on U.S. death certificates in 1996, according to CDC’s National Center for Health Statistics. Diabetes is believed to be underreported on death certificates, both as a condition and as a cause of death.

6.3 million. 18.4% of all people 65 years and older have diabetes.

15.6 million. 8.2% of all people 20 years and older have diabetes.

123,000. 0.16% of all people under age 20 have diabetes.

Prevalence data for diabetes among Asian Americans and Pacific Islanders are limited. Some groups within this population are at increased risk for diabetes. For example, data collected from 1988 to 1995 suggest that Native Hawaiians are twice as likely to have diagnosed diabetes as white residents of Hawaii.

The four types of diabetes are:

? Type 1 diabetes was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes. Type 1 diabetes may account for 5% to 10% of all diagnosed cases of diabetes. Risk factors are less well defined for type 1 diabetes than for type 2 diabetes, but autoimmune, genetic, and environmental factors are involved in the development of this type of diabetes

? Type 2 diabetes was previously called non-insulin dependent diabetes mellitus (NIDDM) or adult-onset diabetes. Type 2 diabetes may account for about 90% to 95% of all diagnosed cases of diabetes. Risk factors for type 2 diabetes include older age, obesity, family history of diabetes, prior history of gestational diabetes, impaired glucose tolerance, physical inactivity, and race/ethnicity. African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Pacific Islanders are at particularly high risk for type 2 diabetes.

? Gestational diabetes develops in 2% to 5% of all pregnancies but disappears when a pregnancy is over. Gestational diabetes occurs more frequently in African Americans, Hispanic/Latino Americans, American Indians, and persons with a family history of diabetes. Obesity is also associated with higher risk. Women who have had gestational diabetes are at increased risk for later developing type 2 diabetes. In some studies, nearly 40% of women with a history of gestational diabetes developed diabetes in the future.

? “Other specific types” of diabetes result from specific genetic syndromes, surgery, drugs, malnutrition, infections, and other illnesses. Such types of diabetes may account for 1% to 2% of all diagnosed cases of diabetes.

Diseases that come with diabetes

Heart disease

? Heart disease is the leading cause of diabetes-related deaths. Adults with diabetes have heart disease death rates about 2 to 4 times as high as that of adults without diabetes.

Stroke

? The risk of stroke is 2 to 4 times higher in people with diabetes.

High blood pressure

? An estimated 60% to 65% of people with diabetes have high blood pressure.

Blindness

? Diabetes is the leading cause of new cases of blindness in adults 20 to 74 years old.

? Diabetic retinopathy causes from 12,000 to 24,000 new cases of blindness each year.

Kidney disease

? Diabetes is the leading cause of end-stage renal disease, accounting for about 40% of new cases.

? 27,851 people with diabetes developed end-stage renal disease in 1995.

? In 1995, a total of 98,872 people with diabetes underwent dialysis or kidney transplantation.

Nervous system disease

? About 60% to 70% of people with diabetes have mild to severe forms of nervous system damage (which often includes impaired sensation or pain in the feet or hands, slowed digestion of food in the stomach, carpal tunnel syndrome, and other nerve problems).

? Severe forms of diabetic nerve disease are a major contributing cause of lower extremity amputations.

Amputations

? More than half of lower limb amputations in the United States occur among people with diabetes.

? From 1993 to 1995, about 67,000 amputations were performed each year among people with diabetes.

Dental disease

? Periodontal disease (a type of gum disease that can lead to tooth loss) occurs with greater frequency and severity among people with diabetes. Periodontal disease has been reported to occur among 30% of people aged 19 years or older with type 1 diabetes.

Complications of pregnancy

? The rate of major congenital malformations in babies born to women with preexisting diabetes varies from 0% to 5% among women who receive preconception care to 10% among women who do not receive preconception care.

? Between 3% to 5% of pregnancies among women with diabetes result in death of the newborn; the rate for women who do not have diabetes is 1.5%.

Other complications with diabetes

? Diabetes can directly cause acute life-threatening events, such as diabetic ketoacidosis and hyperosmolar nonketotic coma.

? People with diabetes are more susceptible to many other illnesses. For example, they are more likely to die of pneumonia or influenza than people who do not have diabetes.

Cost for medical treatment for diabetes

? Direct medical costs: $44 billion

? Indirect costs: $54 billion

New diagnostic criteria for diabetes

The new diagnostic criteria for diabetes include the following changes:

? The routine diagnostic test for diabetes is now a fasting plasma glucose test rather than the previously preferred oral glucose tolerance test. (However, in certain clinical circumstances, physicians may still choose to perform the more difficult and costly oral glucose tolerance test.)

? A confirmed fasting plasma glucose value of greater than or equal to 126 milligrams/deciliter (mg/dL) indicates a diagnosis of diabetes. Previously, a value of greater than or equal to 140 mg/dL had been required for diagnosis.

? In the presence of symptoms of diabetes, a confirmed nonfasting plasma glucose value of greater than or equal to 200 mg/dL indicates a diagnosis of diabetes.

? When a doctor chooses to perform an oral glucose tolerance test (by administering 75 grams of anhydrous glucose dissolved in water, in accordance with World Health Organization standards, and then measuring the plasma glucose concentration 2 hours later), a confirmed glucose value of greater than or equal to 200 mg/dL indicates a diagnosis of diabetes.

In pregnant women, different requirements are used to identify the presence of gestational diabetes.

Treatment of diabetes

Diabetes knowledge, treatment, and prevention strategies advance daily. Treatment is aimed at keeping blood glucose near normal levels at all times. Training in self- management is integral to the treatment of diabetes. Treatment must be individualized and must address medical, psychosocial, and lifestyle issues.

? Treatment of type 1 diabetes: Lack of insulin production by the pancreas makes type 1 diabetes particularly difficult to control. Treatment requires a strict regimen that typically includes a carefully calculated diet, planned physical activity, home blood glucose testing several times a day, and multiple daily insulin injections.

? Treatment of type 2 diabetes: Treatment typically includes diet control, exercise, home blood glucose testing, and in some cases, oral medication and/or insulin. Approximately 40% of people with type 2 diabetes require insulin injections.