

DIABETES IN AFRICAN-AMERICANS

Today, diabetes mellitus is one of the most serious health problems in the United States. Diabetes is particularly common in middle-aged adults and the elderly. It is much more common in obese people and in black Americans than in those of European origin. In African-Americans over 50 years old, 19% of men and 28% of women have diabetes. For every 6 white Americans who have diabetes, there are 20 black diabetics. African-Americans with diabetes have more complications than white diabetics.

What is diabetes?

Diabetes mellitus is a disease that is characterized by high blood glucose concentrations. There are two different processes that cause diabetes. Type I diabetes is due to problems with insulin secretion. The pancreas, which is an organ in the abdomen located behind the stomach, has cells called islets that normally produce insulin. In type I diabetes, these islet cells stop producing insulin and the result of this is insulin deficiency. Patients with type I diabetes must receive insulin to be able to control their glucose concentrations. Type II diabetes occurs when the body cannot effectively use the insulin that the pancreas produces. These patients require medication to help the body use insulin more effectively. In some cases, additional insulin may be needed to control glucose. Diabetes can be associated with serious complications and early death, but people with diabetes can take measures to lower these risks. Most African-Americans (approximately 90 to 95%) with diabetes have type II diabetes. This type of diabetes generally appears in adulthood and is due to the body's resistance to the action of insulin. It can be treated with diet, exercise, oral medications (pills) and injected insulin. A small number of African-Americans (between 5 to 10%) have type I diabetes, which generally appears before the age of 20 and is always treated with insulin.

What risk factors increase the likelihood of developing type II diabetes?

The frequency of diabetes in adult African-Americans is influenced by the same risk factors that are associated with type II diabetes in other Americans. There are two main risk factors that increase the likelihood of developing type II diabetes. The first is genetics. The patient who has diabetic family members is more likely to develop diabetes. The second are lifestyle-related risk factors, which are primarily obesity and physical inactivity.

Genetic risk factors

It is a known fact that diabetes runs in families. Research suggests that there is a strong genetic component in developing both type I as well as type II diabetes. The risk of developing type I diabetes appears to be related to certain genes that affect the immune system. Insofar as type II diabetes, there may be genes that affect insulin secretion and insulin resistance. Some researchers believe that African-Americans inherited a gene from their African ancestors that affects insulin resistance.

Medical risk factors

Impaired glucose tolerance

Impaired glucose tolerance is a condition in which blood glucose concentrations increase to abnormally high levels after eating. These levels are not high enough for a diagnosis of diabetes, but are higher than the normal levels that are expected in non-diabetic individuals. Impaired glucose tolerance may be an early stage of diabetes, and people with this condition are at greater risk of developing type II diabetes than people whose blood glucose concentrations are normal.

Gestational diabetes

Approximately 2 to 5% of pregnant women have mild abnormalities in glucose concentrations and in insulin secretion during pregnancy. This is known as gestational diabetes. Although the glucose and insulin concentrations in these women return to normal after pregnancy, approximately 50% develop type II diabetes later on in life.

Hyperinsulinemia and insulin resistance

Higher than normal fasting insulin concentrations, what is known as hyperinsulinemia, are associated with a greater risk of developing type II diabetes. Hyperinsulinemia often precedes diabetes several years before. In some scientific studies, insulin concentrations were higher in African-Americans than in whites. It was found that African-American women in particular have high insulin concentrations, which indicates their greater predisposition to having type II diabetes.

Obesity

Besides the degree of obesity, the place where the excess weight is found determines the risk of developing type II diabetes. Excess weight that is found above the waist (the "belly") is a stronger risk factor than excess weight that is found below the waist. African-Americans have a tendency to gain weight on the upper part of the body. Although African-Americans have higher obesity rates, research suggests that obesity in and of itself is not to blame for the higher prevalence of diabetes. Compared to white Americans of the same age, socioeconomic status and degree of obesity, African-Americans have a higher incidence of diabetes.

Physical activity

Regular physical activity has shown to lower the risk of developing type II diabetes. Researchers suspect that lack of exercise is one of the factors that contribute to African-Americans having a high incidence of diabetes.

How do the complications of diabetes affect African-Americans?

Compared to white Americans with diabetes, African-Americans are more likely to have complications from diabetes. These complications include eye disease, which causes loss of eyesight; renal disease, which can lead to renal failure and require dialysis; and peripheral vascular disease, which can increase the risk of

amputation. African-Americans are more likely to have disabilities related to these complications.

Eye disease

Diabetic retinopathy is a disease caused by deterioration of the blood vessels in the retina, which is the back part of the eye. High blood glucose concentrations increase the risk of diabetic retinopathy. It can cause deterioration of eyesight and, subsequently, blindness. The frequency of diabetic retinopathy is 40 to 50% greater in African-Americans.

Renal failure

African-Americans with diabetes suffer from renal failure, also called end-stage renal disease, approximately four times more often than white Americans. Hypertension, the second cause of end-stage renal disease, is also more prevalent in African-Americans and is responsible for 42% of all cases of this disease.

Greater mortality

In every age group, both in men as well as in women, the death rates in diabetic African-Americans were greater than in diabetic whites. The overall mortality rate was 20% higher in black men and 40% higher in black women.

With proper medical care, a healthy diet, exercise and weight control, African-Americans with diabetes can significantly lower their risk of complications and live healthy for a long time.