

Diabetes and Heart Disease



MARSHFIELD CLINIC



MINISTRY HEALTH CARE



Two Leaders, One Leading Heart Care Team





Diabetes and Heart Disease

According to the American Heart Association, diabetes is one of the six major risk factors of cardiovascular disease. Affecting more than 7% of the American population in 2000, diabetes and heart disease are closely linked. In fact, adults with diabetes are 2-4 times more likely to have heart disease or suffer a stroke than those who do not have it.

Heart disease is the leading cause of diabetes-related deaths, yet many individuals with this disease don't understand its risks or how to manage them. According to survey results from the American Heart Association in May 2001, 63% of individuals with diabetes said they have cardiovascular disease, yet only 33% identified heart disease as the "most serious" diabetes-related complication.

What Is Diabetes?

Diabetes is a disease in which the body does not produce or properly use insulin. Insulin is a hormone that is needed to convert sugar, starches and other food into energy needed for daily life. Blood glucose, or sugar, is the basic fuel for the cells in the body. Insulin takes the sugar from the blood into the cells. When glucose builds up in the blood instead of going into cells, it can cause two problems:

- The cells will be starved for energy.
- Over time, high blood sugar levels may hurt your eyes, kidneys, nerves or heart.

The cause of diabetes continues to be a mystery, although both genetics and environmental factors, such as obesity and lack of exercise, appear to play a role.



There are 20.8 million children and adults in the United States, or 7.3% of the population, who have diabetes. An estimated 14.6 million have been diagnosed with it, but unfortunately, 6.2 million people (or nearly one-third) are unaware they have the disease.

Finding out you have diabetes is scary, but don't panic. Diabetes is serious, but people with it can live long, healthy and happy lives.

Types of Diabetes

Type 1

Type 1 diabetes affects 5-10% of Americans, generally children and young adults. In the past it was referred to as juvenile or insulin-dependent diabetes and results from the body's failure to produce insulin. Individuals with type 1 diabetes cannot survive without insulin.

Type 2

Type 2 diabetes is the most common form affecting 90-95% of the diabetes population over 20 years old. Previously referred to as adult-onset or non-insulin dependent diabetes (though some will need to take insulin), more and more young Americans are developing it.

In type 2 diabetes, either the body does not produce enough insulin or the cells ignore it. This is called insulin resistance. Insulin is necessary for the body to be able to use sugar.

Diabetes contributes to over 220,000 U.S. deaths per year. However, many people with type 2 diabetes are not aware they have the disease and may already have developed various complications associated with it.

Type 2 diabetes is often seen in people who:

- are over 45 years old
- are overweight or obese
- are African American, Hispanic, Native American, Asian American or Pacific Islander
- have a family history

and tend to have the following characteristics:

- Insulin resistant (9 out of 10)
- Obesity (50% men and 70% women)
- Physically inactive

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- Low HDL (good cholesterol)
 - High triglycerides
 - Increased prevalence of high blood pressure

Regardless of their type of diabetes, individuals are faced with the daily challenge of controlling blood sugar levels to prevent or delay the onset of many serious health complications, including cardiovascular disease.

Gestational Diabetes

Gestational diabetes affects about 4% of all pregnant women – about 135,000 cases in the United States each year. The condition usually resolves after delivery; however, many develop type 2 diabetes in the future. It is important to have your healthcare provider monitor your blood sugar regularly.

Pre-diabetes

Pre-diabetes is a condition that occurs when a person's blood glucose levels are higher than normal but not high enough for a diagnosis of type 2 diabetes. There are 41 million Americans who have pre-diabetes, in addition to the 20.8 million with diabetes. This can develop into type 2 diabetes. It is very important to make the necessary lifestyle changes to prevent this from happening as well as having regular check-ups with your healthcare provider.

Insulin Resistance

Insulin resistance occurs when the body cannot produce enough insulin or use it efficiently. To compensate, the pancreas produces more and more insulin to maintain blood sugar levels. Over time, the insulin-producing cells in the pancreas become defective, and ultimately, decrease in number. As a result, blood sugar levels rise, causing diabetes to develop.

Insulin resistance is associated with blood lipid imbalances such as elevated LDL (bad cholesterol), low HDL (good cholesterol) and increased levels of triglycerides. All of these contribute to plaque build-up (atherosclerosis), which causes hardening of the arteries (arteriosclerosis). According to the American Heart Association, more than 60 million Americans have insulin resistance and 1 in 4 will develop Type 2 diabetes.



Cardiovascular Disease (Heart Disease and Stroke)

Individuals with diabetes are 2-4 times more likely to develop cardiovascular disease. This is largely due to the fact that diabetes is associated with many cardiovascular disease risk factors such as:

- High blood pressure
- High LDL (bad cholesterol)
- Low HDL (good cholesterol)
- Obesity
- Physical inactivity

What Can I Do?

No one really knows what causes diabetes, nor have they found a cure. The good news is that maintaining your health can prevent or delay type 2 diabetes. Careful control of blood sugar through diet, healthy weight and a regular exercise program are critical in the management of this disease.

For more information on the Marshfield Clinic and Ministry Health Care heart care team, ask your healthcare provider or visit www.oneheartcareteam.org.

AHA Recommendation

Diabetes is a major risk factor for stroke and coronary heart disease, which includes heart attack. People with diabetes may avoid or delay heart and blood vessel disease by controlling the other risk factors. It's especially important to control weight and blood cholesterol with regular exercise and a diet that's low in saturated fat and cholesterol. It's also important to lower high blood pressure and not to smoke.

References:

- American Diabetes Association (ADA)
- American Heart Association (AHA)
- Heart Disease and Stroke Statistics 2003 (AHA)
- Centers for Disease Control (www.cdc.gov)





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