

## *Diabetes and Heart Disease*

The link between diabetes and heart disease:

Heart and vascular disease often go hand-in-hand with diabetes. Persons with diabetes are at a much greater risk for heart attacks, strokes, and high blood pressure. Other vascular problems due to diabetes include poor circulation to the legs and feet. Unfortunately, many of the cardiovascular problems can go undetected and can start early in life.

Silent heart disease in young persons with diabetes:

Serious cardiovascular disease can begin before the age of 30 in persons with diabetes. The two most common types of diabetes are type 1 and type 2. Type 1 diabetes (also called insulin-dependent diabetes mellitus) is an autoimmune disease in which the body's immune system attacks the cells in the pancreas that produce insulin, resulting in no or a low amount of insulin. Type 2 diabetes (also called non-insulin dependent diabetes mellitus) is the result of the body's inability to make enough, or to properly use, insulin.

According to the American Diabetes Association, damage to the coronary arteries is two to four times more likely in asymptomatic persons with type 1 diabetes than in the general population. Because symptoms may be absent at first, the American Diabetes Association recommends early diagnosis and treatment, and management of risk factors.

Many studies demonstrate that persons with type 2 diabetes are at increased risk for heart disease. In fact, one study found that persons with type 2 diabetes without apparent heart problems ran the same risk for heart disease as persons without diabetes who had already suffered one heart attack.

What causes heart disease in persons with diabetes?

Persons with diabetes often experience changes in the blood vessels that can lead to cardiovascular disease. In persons with diabetes, the linings of the blood vessels may become thicker, making it more difficult for blood to flow through the vessels. When blood flow is impaired, heart problems or stroke can occur. Blood vessels can also suffer damage elsewhere in the body due to diabetes, leading to eye problems, kidney problems, and poor circulation to the legs and feet.

What is the metabolic syndrome?

Metabolic syndrome is characterized by a group of metabolic risk factors in one person. People with the metabolic syndrome are at increased risk of coronary heart disease, other

diseases related to plaque buildups in artery walls (e.g., stroke and peripheral vascular disease), and type 2 diabetes, according to the American Heart Association. Risk factors for metabolic syndrome include:

- excessive fat tissue in and around the abdomen
- blood fat disorders that foster plaque buildup in artery walls
- insulin resistance or glucose intolerance
- high fibrinogen or plasminogen activator inhibitor ([-1] in the blood)
- raised blood pressure (130/85 mmHg or higher)
- elevated high-sensitivity C-reactive protein in the blood

The underlying causes of this syndrome are overweight or obesity, physical inactivity, and genetic factors. It has become increasingly common in the US, affecting about 20 percent to 25 percent of US adults. The syndrome is closely associated with a generalized metabolic disorder called insulin resistance, in which the body can't use insulin efficiently.

What are the symptoms of heart disease?

The following are the most common symptoms of heart disease. However, each individual may experience symptoms differently. Symptoms may include:

- chest pain
- shortness of breath
- irregular heartbeat
- swollen ankles

The symptoms of heart disease may resemble other medical conditions or problems. Always consult your physician for a diagnosis.

Prevention and treatment of heart disease in persons with diabetes:

Even when taking proper care of yourself, heart disease may still occur. Specific treatment for heart disease will be determined by your physician based on:

- your age, overall health, and medical history
- extent of the disease
- your tolerance for specific medications, procedures, or therapies
- expectations for the course of the disease
- your opinion or preference

When risk factors are eliminated (or reduced) in a person with diabetes, the risk for heart disease may be reduced. Taking care of yourself and controlling your blood sugar can often slow down or prevent the onset of complications. Other preventive treatment measures may include:

See a physician regularly.

Have annual electrocardiograms, or EKGs (a test that records the electrical activity of the heart, shows abnormal rhythms, and detects heart muscle damage), cholesterol and blood pressure check-ups, and pulse measurement in legs and feet.

Pay attention to your symptoms and report them promptly to your physician.

Control your blood sugar levels.

Control blood pressure levels with lifestyle and diet changes, and/or medication.

Keep low-density lipoprotein (LDL) levels (the "bad" cholesterol) at less than 100 mg/dL.

Control your weight.

Exercise regularly.

Eat a healthy and balanced diet.

Do not smoke.

Limit consumption of alcoholic beverages.

Always consult your physician for the most appropriate treatment plan based on your medical condition.