

## DIABETES AND HEART DISEASE



### The Connection

**Diabetes and Heart Disease** are connected in many ways. Having Diabetes is known to make an individual more than twice as likely to have a heart attack or stroke. The risk of Heart Disease is made greater by having Diabetes and is high even when blood sugar levels are managed.

Most commonly, coronary artery disease is caused by clogged arteries supplying the heart. Plaque made up of cholesterol causes damage to the arteries and hardening of the walls of the arteries. These clots ultimately cause atherosclerosis when plaque continues to build against the artery walls causing -

them to narrow, starving heart tissue of oxygen-rich blood. This starvation of oxygen and nutrients causes the muscle to weaken, increasing the risk of heart diseases, stroke, and even heart failure.

**Symptoms** of heart disease include chest pain, shortness of breath, fainting, and tachycardia.

Having Diabetes increases the chance of heart disease just as much as having a heart attack. The longer a person has diabetes, the higher their chances are of developing Heart Disease. (...)

Many people with diabetes also have high blood pressure which is also a major risk factor for Cardiovascular Disease. Many of the complications caused by diabetes damage blood vessels.

Heart failure often occurs in patients with Diabetes, not only because of the development of heart diseases including coronary artery disease, but also in part due to the multiple pathophysiological and metabolic abnormalities caused by the changes in a person's glucose metabolism.

**Population Studies and Clinical Trials** have both shown that Diabetes greatly increases the risk of hospitalization due to Heart Failure. This increased risk is due to many factors including Left Ventricular Ejection Fraction.



### **Testing for Cardiovascular Disease**

An Electrocardiogram (ECG) is used to monitor the heart's electrical signals in order to check heart rate and rhythm. This test can reveal most heart diseases including ventricular hypertrophy (Enlargement of the heart due to high blood pressure).

Holter Monitoring ECG's are used to monitor the heart for abnormalities over 24-48 hour periods.

Echocardiograms that produce images of your heart pumping allows the evaluation of heart valves and chamber function.

Stress Testing ECG's are used to monitor your heart rate, rhythm, blood pressure, and breathing while increasing activity levels usually on a treadmill.

CAT Scans and MRI's are also used to produce 2D or 3D images of the heart to check the function of the heart vessels and visibly detect blockages.



## How to Reduce the Risk of Diabetes & Heart Disease

Eating healthy food, being physically active, being smoke and alcohol free are all major ways to prevent and manage the risk of Diabetes and Heart Disease.

Regular appointments with your Doctor are also extremely important. Regular Heart Health Checks (HHC)'s and blood sugar tests should be scheduled regularly to determine your risk for Cardiovascular Disease.

Heart Diseases Caused by Diabetes include Peripheral Arterial Disease and Cardiomyopathy, both of which are preventable with the treatment and/or management of Diabetes and its risk factors.



One reason for the unknown future of patients with both Diabetes and Heart Disease seems to be increased myocardial dysfunction. This has been seen to lead to accelerated heart failure. The problem can make patients with diabetes more prone to congestive heart failure.

## How to Prevent Type 2 Diabetes

The Most Common form of Diabetes is Type 2 Diabetes. This disorder usually happens later in a person's life. The metabolic causes of Type 2 Diabetes are diet and activity level. Poor diet and low activity levels can create insulin resistance, increasing susceptibility to the disease drastically.

## How Many are Affected

Over 10 Million Americans are Diagnosed with Diabetes, another 5 Million are thought to be undiagnosed, 90% of these Americans have the Type 2 Variety, and 97 Million Americans are overweight or obese.

**Diabetes and Heart Disease are both preventable** with the right information and action. Doctors have the tools required to fight the problem, and those at risk should have the information to prevent these diseases from occurring or persisting within their own lives.

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*“A Full 12 Lead ECG will show if there are any signs of heart disease, define, and locate it. That information will help you identify the current cardiovascular state of your patient's heart, and affect what diet or exercise program you may recommend to your patient. You will want to monitor your patient's heart alongside any programs you may recommend to your patient over time.” - Roger E. Nasiff Ph.D.*



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## Resources Linked

[Cardiovascular Disease and Diabetes](#)

[Diabetes Can Affect Your Heart](#)

[Diabetes and Heart Disease](#)

[Diabetes and Cardiovascular Disease](#)

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