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## Diabetes and Cardiovascular Disease: What's the Link?

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Cardiovascular disease (CVD) is a complication and cause of premature death among people with diabetes. Unfortunately, many people with diabetes do not understand the risk of cardiovascular disease or what they can do to help prevent it.

Diabetes is a disorder in which the body does not make insulin, does not make enough insulin, or does not properly use the insulin it makes (insulin resistance). Insulin helps the body use the bodies favorite source of energy, sugar. Without insulin, glucose (sugar) from food cannot enter cells. Glucose builds up in the blood and body tissues become starved for energy. Long-term, high blood sugar levels can damage the arteries, kidneys, eyes, nerves, and other tissues.

### Risk of Cardiovascular Disease

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Adults with diabetes are 2-4 times more likely to have CVD than people without diabetes. In people with diabetes, high blood glucose levels are associated with the development of atherosclerosis. This is a condition in which fatty deposits (plaque) damage the lining of the arteries, causing them to narrow and harden. Atherosclerosis, the main cause of CVD, interferes with blood flow—ultimately leading to several manifestations of CVD including:

- Coronary artery disease and heart attacks
- Cerebrovascular disease and stroke
- Peripheral artery disease and claudication (pain with walking)

### Why Is There a Risk?

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People with type 2 diabetes often have an increased risk of CVD for the following reasons:

Their platelets have an added tendency to clump together leading to clotting problems and poor blood flow.  
They have higher rates of high blood pressure and obesity.  
They tend to have unfavorable lipid profiles, particularly increased LDL or “bad” cholesterol; low levels of HDL, or “good” cholesterol; and increased levels of triglycerides.

People with diabetes who smoke double their risk of CVD.

### Who Are the High-risk Groups?

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Those with the highest risk for diabetes and its CVD complications include:

- People with a family history of diabetes
- Overweight and obese people
- Older people
- Special populations
  - African Americans
  - Hispanic/Latino Americans
  - American Indians
  - Asian Americans
  - Pacific Islanders

### Management of Diabetes

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According to the National Institute of Diabetes and Digestive and Kidney Diseases, the management of three critical indicators is essential for reducing the risk of heart attacks and strokes in people with diabetes:

- Blood glucose is measured with the hemoglobin A1C test. The recommended goal for this test is a reading of less than 7%.
- Blood pressure should be less than 130/80 mmHg.
- LDL cholesterol should be less than 100 mg/dl (2.6 mmol/L).

### How Do You Lower the Risk?

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People with diabetes can lower their risk of CVD with therapeutic lifestyle changes such as smoking cessation, weight management, and regular exercise. Drug therapy is also available to control some risk factors for CVD and prevent or treat the complications of diabetes.

People with diabetes can take the following steps to help reduce their risk of CVD:

- Get involved in treatment decisions with your healthcare team.
- Be actively involved in the management of your disease.
- Set lifestyle goals.
- Become well-educated about diabetes and CVD.
- Eat a healthy diet that’s low in saturated fat and cholesterol and low in sodium.
- Eat more fiber.
- Get at least 30-60 minutes of physical activity.
- Diligently control your blood glucose, cholesterol, and blood pressure with and without medications.
- Ask about aspirin therapy for CVD prevention.

If you smoke, quit.

**RESOURCES:**

American Diabetes Association

<http://www.diabetes.org/>

National Diabetes Education Program

<http://ndep.nih.gov/>

National Institute of Diabetes and Digestive and Kidney Diseases

<http://www.niddk.nih.gov/>

**CANADIAN RESOURCES:**

Canadian Diabetes Association

<http://www.diabetes.ca/>

Heart and Stroke Foundation of Canada

<http://ww2.heartandstroke.ca>

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Last reviewed May 2010 by [Brian Randall, MD](#)

Last Updated: 5/24/2010

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