

What is diabetes?

Diabetes is a serious, lifelong condition in which the body cannot properly control the level of sugar (glucose) in the blood, resulting in higher than normal blood sugar levels. Sugar levels in your blood are regulated by a hormone called insulin. In people with diabetes, the body doesn't make enough insulin or it can't use insulin as well as it should.

During digestion, carbohydrates from food are broken down into sugar, which is then absorbed into the bloodstream. In response to this absorption, the pancreas secretes insulin, allowing sugar to be absorbed from the blood into cells and tissues. Cells and tissues then use the sugar for energy. When you have diabetes, sugar builds up in your blood instead of being used for energy.

Diabetes increases your risk of heart failure, heart disease, heart attack, stroke, and early death, as well as kidney, nerve, and eye damage.

How does diabetes increase my risk of developing heart failure, and who is at risk?

Diabetes increases your risk of developing heart failure independently of any other risk factors such as high blood pressure and coronary artery disease.^{1, 2} If you have diabetes, your risk for developing heart failure rises significantly. Women with diabetes over the age of 45 are 5 times as likely to develop heart failure than are women of the same age without diabetes.

^{1, 2}

High blood sugar (glucose) levels can directly damage and inflame the heart, leading to a thicker muscle wall in the pumping chambers (the ventricles).³⁻⁶ These changes are more pronounced in women than in men, even in women as young as 15 years of age.

^{3, 7, 8}

A thickening muscle wall eventually limits the heart's ability to fill with blood, which may explain why women are more likely than men to develop

[diastolic heart failure](#)

, a form of heart failure in which the heart's pumping chambers (ventricles) can't expand to fill

properly with blood. The higher your average blood sugar (hemoglobin A1c) levels, the higher your chances are of developing heart failure.

1, 9

Each 1% increase in Hb A1c levels is associated with an 8% increase in the risk of heart failure.

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Diabetes also increases your risk of heart failure by accelerating the development of [coronary artery disease \(CAD\)](#)

and

[high blood pressure](#)

. A high level of sugar in your blood causes the buildup of plaque in your blood vessels. The blood vessels become less elastic and narrower as the plaque buildup increases, restricting blood flow and forcing the heart to work harder to pump blood through the narrower blood vessels.

What are the different types of diabetes?

There are three major types of diabetes:

- **Type 1 diabetes** results when the body can't make enough insulin to properly control the level of sugar in the blood. Also known as juvenile-onset or insulin-dependent diabetes mellitus (IDDM), type 1 diabetes is most commonly diagnosed in children and young adults.

- **Type 2 diabetes** results when the body can't properly use the insulin it produces to control the level of sugar in the blood. Also known as adult-onset or non-insulin-dependent diabetes mellitus (NIDDM), type 2 diabetes is the most common form of diabetes, usually developing in adults older than 40.

- **Gestational diabetes** is high blood sugar that develops during pregnancy in women who have never had diabetes before. It occurs in 2% to 9% of pregnancies and usually disappears once the baby is born; however, it can increase your risk of developing type 2 diabetes later.

Pre-diabetes means there is more sugar in the blood than normal, but not enough to be diagnosed as diabetes. Pre-diabetes nearly doubles your chances of developing cardiovascular disease, including heart failure.

^{7, 10-13} Blood sugar levels higher than 109 mg/dl have been shown to increase the risk of developing heart failure by 83%.

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Click here for more information on what blood sugar levels are considered pre-diabetic.

What are the signs and symptoms of diabetes?

Many people with type 2 diabetes have no symptoms, or symptoms that are so mild they do not notice them. People with type 1 diabetes tend to have more severe symptoms that appear more suddenly. Symptoms of diabetes include:

- Increased thirst or hunger
- Increased urination (especially at night)
- Nausea, vomiting, or stomach pain
- Losing weight without trying
- Feeling very tired
- Very dry, itchy skin
- Slow healing sores
- More infections than usual (including vaginal yeast and bladder infections in women)
- Tingling or numbness in the feet or hands
- Blurred vision

Who should be tested for diabetes?

Everyone 45 years or older should be tested for diabetes. People younger than 45 should be tested if they are overweight and have one or more risk factors for diabetes (see the next page), particularly high blood pressure or high cholesterol. If your test results are normal, you should be tested again every 3 years. If you have pre-diabetes, you should be checked every 1 to 2 years after your diagnosis.

[Preventing Diabetes & Heart Failure](#)

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