

# Spotlight on Health

## Diabetes: Risk Reduction Through Knowledge and Action

The number of people with diabetes (high blood sugar) is increasing every year. In the United States, nearly 1 in 10 people have diabetes.<sup>1</sup> That's about 30 million people in total. And about 1 in 4 people with diabetes do not know they have it.<sup>1</sup> Most (95%) have type 2 diabetes. This type of diabetes often happens when people become overweight. Type 1 affects far fewer people and has other causes. If diabetes is not treated, it can cause very serious health problems. Fortunately, treatments can help stop these problems from happening.

This newsletter will discuss diabetes and laboratory tests that are used to check the amount of sugar in the blood. These tests can help tell if you have diabetes or if you're at risk of getting it. This newsletter will also discuss problems that can happen if diabetes is not treated, and ways to avoid them.

### Glucose in the Blood: Diabetes and Prediabetes

The cells of the body use glucose for energy. Glucose is a kind of sugar. After a meal, food in the body is changed to glucose, which moves into the blood. In healthy people, insulin helps your body store extra sugar so blood levels don't get too high. When the amount of glucose in the blood is always too high, it is called diabetes. Prediabetes is when the blood sugar is higher than normal, but not high enough to be called diabetes. Most people with prediabetes will eventually develop diabetes. However, losing weight, getting more exercise, and eating a healthier diet can help delay or avoid diabetes.<sup>2</sup>

### Measuring Glucose in the Blood

Measuring the amount of glucose in the blood (blood glucose) can help healthcare providers tell if a person has diabetes or prediabetes (see Sidebar). Blood glucose can be measured after a person has fasted (not eaten) for 8 hours. It can also be measured 2 hours after drinking a special sweet liquid (2-hour glucose). Another way to tell if a person has diabetes or prediabetes is to measure hemoglobin A1c (HbA1c) in the blood. HbA1c levels show your average glucose levels during the past 2 or 3 months.

The American Diabetes Association (ADA) recommends that testing for prediabetes and diabetes should be considered for people who are overweight and have other risk factors for diabetes (see Sidebar).<sup>2</sup> For people without these risk factors,<sup>2</sup> ADA recommends that testing for diabetes begins at age 45.

### Controlling Blood Glucose

Glucose is controlled through lifestyle, medicine, or both. Losing weight and getting more exercise helps to lower blood glucose. This can stop people with prediabetes from getting diabetes, and help people with mild diabetes. Some people with diabetes keep their glucose level near normal by taking oral medicines. People with more severe diabetes may need injections of insulin. Measuring the level of glucose and HbA1c helps to see if diabetes treatments are working.<sup>2</sup>

### What Happens if Glucose Is Too High?

Almost every part of the body can be damaged if blood glucose stays high.<sup>2</sup> High blood glucose can damage the heart and arteries. This dangerous complication makes having a heart attack or stroke more likely.<sup>3</sup> Damage to the arteries can



### Know Your Numbers

Both glucose and HbA1c measurements can help diagnose diabetes and prediabetes<sup>2</sup>:

- A fasting glucose level of 126 mg/dL or more means diabetes; 100 mg/dL to 125 mg/dL means prediabetes.
- A 2-hour glucose level of 200 mg/dL or more means diabetes; 140 mg/dL to 199 mg/dL means prediabetes.
- HbA1c of 6.5% or more means diabetes; 5.7% to 6.4% means prediabetes.

### Who Develops Diabetes?

Anyone can develop diabetes, but some factors increase your risk<sup>2</sup>:

- Age: 45 years or older
- Race: African American, Hispanic/Latino American, Native American, Pacific Islander, or Asian American
- Being inactive: less than 10 minutes/week of moderate or vigorous activity
- Being overweight or obese
- High blood pressure (140/90 mm Hg or greater)
- Low levels of high-density lipoprotein (HDL) cholesterol in your blood (less than 35 mg/dL)
- High levels of triglycerides in your blood (greater than 250 mg/dL)
- A first-degree relative with diabetes
- A history of cardiovascular disease
- Gestational diabetes or polycystic ovary syndrome

cause the legs and feet to not get enough blood. If this happens, a person may need an amputation. High blood glucose can damage the eyes and cause blindness. It can also damage the kidneys so much that they no longer work. When this happens, a person needs to have dialysis. Keeping the blood glucose level as normal as possible greatly decreases the chance these complications will happen. For example, men with diabetes can cut their risk of dying from heart disease by nearly half if they keep their blood glucose closer to normal levels.<sup>a</sup>

### What Can You Do?

Educate yourself about the risks of getting diabetes and what to do if you have it. The National Diabetes Prevention Program teaches people how to prevent or delay the development of diabetes ([CDC.gov/diabetes/prevention/index.html](http://CDC.gov/diabetes/prevention/index.html)).<sup>4</sup> Diabetes self-management programs ([CDC.gov/learnmorefeelbetter/programs/diabetes.htm](http://CDC.gov/learnmorefeelbetter/programs/diabetes.htm)) also help. They can teach people with diabetes to not be afraid of the disease, check blood glucose regularly, eat healthy foods, become more active, take medicines properly, and cope with stress. Smart phone applications (Apps) can also help guide people with diabetes in keeping their blood glucose normal.<sup>5</sup> Finally, see your healthcare provider regularly and follow their recommendations.

### How Your Healthcare Provider Can Help

Your healthcare provider can find out if you are at risk of having diabetes. They can order blood tests to see if you have prediabetes or diabetes. If your blood glucose is high, they may recommend you get more exercise and lose weight. Or they may prescribe medication to lower the blood glucose. They will check your blood glucose frequently to see if the treatments are working, and may order other tests to see if there has been damage to different parts of your body.

### How the Laboratory Can Help

Quest Diagnostics offers tests to find out if you are likely to develop diabetes. Test results can also tell if you have prediabetes or diabetes (see Sidebar on previous page). Quest also offers tests to check if treatments are working, if you have diabetes. Tests are also available to check your risk for other health problems, such as heart and kidney disease.

For more information visit [QuestDiagnostics.com/home/patients/health-test-info/chronic-disease/diabetes.html](http://QuestDiagnostics.com/home/patients/health-test-info/chronic-disease/diabetes.html).

<sup>a</sup> Estimated using a calculator called the "UK Prospective Diabetes Study Risk Engine".

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### Additional Information

- American Diabetes Association: [Diabetes.org/](http://Diabetes.org/)
- [MedlinePlus.gov/diabetes.html](http://MedlinePlus.gov/diabetes.html)
- [WebMD.com/diabetes/default.htm](http://WebMD.com/diabetes/default.htm)

### References

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