



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35

DEPARTMENT OF ECE



DIABETICS:

- **A1C test.** This blood test, which doesn't require not eating for a period of time (fasting), shows your average blood sugar level for the past 2 to 3 months. It measures the percentage of blood sugar attached to hemoglobin, the oxygen-carrying protein in red blood cells. It's also called a glycosylated hemoglobin test.

The higher your blood sugar levels, the more hemoglobin you'll have with sugar attached. An A1C level of 6.5% or higher on two separate tests means that you have diabetes. An A1C between 5.7% and 6.4% means that you have prediabetes. Below 5.7% is considered normal.

- **Random blood sugar test.** A blood sample will be taken at a random time. No matter when you last ate, a blood sugar level of 200 milligrams per deciliter (mg/dL) — 11.1 millimoles per liter (mmol/L) — or higher suggests diabetes.
- **Fasting blood sugar test.** A blood sample will be taken after you haven't eaten anything the night before (fast). A fasting blood sugar level less than 100 mg/dL (5.6 mmol/L) is normal. A fasting blood sugar level from 100 to 125 mg/dL (5.6 to 6.9 mmol/L) is considered prediabetes. If it's 126 mg/dL (7 mmol/L) or higher on two separate tests, you have diabetes.
- **Glucose tolerance test.** For this test, you fast overnight. Then, the fasting blood sugar level is measured. Then you drink a sugary liquid, and blood sugar levels are tested regularly for the next two hours.

A blood sugar level less than 140 mg/dL (7.8 mmol/L) is normal. A reading of more than 200 mg/dL (11.1 mmol/L) after two hours means you have diabetes. A reading between 140 and 199 mg/dL (7.8 mmol/L and 11.0 mmol/L) means you have prediabetes.

If your provider thinks you may have type 1 diabetes, they may test your urine to look for the presence of ketones. Ketones are a byproduct produced when muscle and fat are used for energy. Your provider will also probably run a test to see if you have the destructive immune system cells associated with type 1 diabetes called autoantibodies.

Your provider will likely see if you're at high risk for gestational diabetes early in your pregnancy. If you're at high risk, your provider may test for diabetes at your first prenatal visit. If you're at average risk, you'll probably be screened sometime during your second trimester.

Treatment



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Depending on what type of diabetes you have, blood sugar monitoring, insulin and oral drugs may be part of your treatment. Eating a healthy diet, staying at a healthy weight and getting regular physical activity also are important parts of managing diabetes.

Treatments for all types of diabetes

An important part of managing diabetes — as well as your overall health — is keeping a healthy weight through a healthy diet and exercise plan:

Healthy eating. Your diabetes diet is simply a healthy-eating plan that will help you control your blood sugar. You'll need to focus your diet on more fruits, vegetables, lean proteins and whole grains. These are foods that are high in nutrition and fiber and low in fat and calories. You'll also cut down on saturated fats, refined carbohydrates and sweets. In fact, it's the best eating plan for the entire family. Sugary foods are OK once in a while. They must be counted as part of your meal plan.

Understanding what and how much to eat can be a challenge. A registered dietitian can help you create a meal plan that fits your health goals, food preferences and lifestyle. This will likely include carbohydrate counting, especially if you have type 1 diabetes or use insulin as part of your treatment.

Physical activity. Everyone needs regular aerobic activity. This includes people who have diabetes. Physical activity lowers your blood sugar level by moving sugar into your cells, where it's used for energy. Physical activity also makes your body more sensitive to insulin. That means your body needs less insulin to transport sugar to your cells.

Get your provider's OK to exercise. Then choose activities you enjoy, such as walking, swimming or biking. What's most important is making physical activity part of your daily routine.

Aim for at least 30 minutes or more of moderate physical activity most days of the week, or at least 150 minutes of moderate physical activity a week. Bouts of activity can be a few minutes during the day. If you haven't been active for a while, start slowly and build up slowly. Also avoid sitting for too long. Try to get up and move if you've been sitting for more than 30 minutes.

Treatments for type 1 and type 2 diabetes

Treatment for type 1 diabetes involves insulin injections or the use of an insulin pump, frequent blood sugar checks, and carbohydrate counting. For some people with type 1 diabetes, pancreas transplant or islet cell transplant may be an option.



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Treatment of type 2 diabetes mostly involves lifestyle changes, monitoring of your blood sugar, along with oral diabetes drugs, insulin or both.

Monitoring your blood sugar

Depending on your treatment plan, you may check and record your blood sugar as many as four times a day or more often if you're taking insulin. Careful blood sugar testing is the only way to make sure that your blood sugar level remains within your target range. People with type 2 diabetes who aren't taking insulin generally check their blood sugar much less often.

People who receive insulin therapy also may choose to monitor their blood sugar levels with a continuous glucose monitor. Although this technology hasn't yet completely replaced the glucose meter, it can lower the number of fingersticks necessary to check blood sugar and provide important information about trends in blood sugar levels.

Even with careful management, blood sugar levels can sometimes change unpredictably. With help from your diabetes treatment team, you'll learn how your blood sugar level changes in response to food, physical activity, medications, illness, alcohol and stress. For women, you'll learn how your blood sugar level changes in response to changes in hormone levels.

Besides daily blood sugar monitoring, your provider will likely recommend regular A1C testing to measure your average blood sugar level for the past 2 to 3 months.

Compared with repeated daily blood sugar tests, A1C testing shows better how well your diabetes treatment plan is working overall. A higher A1C level may signal the need for a change in your oral drugs, insulin regimen or meal plan.

Your target A1C goal may vary depending on your age and various other factors, such as other medical conditions you may have or your ability to feel when your blood sugar is low. However, for most people with diabetes, the American Diabetes Association recommends an A1C of below 7%. Ask your provider what your A1C target is.

Insulin

People with type 1 diabetes must use insulin to manage blood sugar to survive. Many people with type 2 diabetes or gestational diabetes also need insulin therapy.

Many types of insulin are available, including short-acting (regular insulin), rapid-acting insulin, long-acting insulin and intermediate options. Depending on your needs, your provider may prescribe a mixture of insulin types to use during the day and night.



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Insulin can't be taken orally to lower blood sugar because stomach enzymes interfere with insulin's action. Insulin is often injected using a fine needle and syringe or an insulin pen — a device that looks like a large ink pen.

An insulin pump also may be an option. The pump is a device about the size of a small cellphone worn on the outside of your body. A tube connects the reservoir of insulin to a tube (catheter) that's inserted under the skin of your abdomen.

Diabetes

Becoming healthier isn't as difficult as you might think if you follow these simple tips.

- [Choose a healthy lifestyle](#): By managing your weight through proper nutrition and regular physical activity, quitting smoking, and finding healthy ways to deal with stress, you can prevent or delay the onset of diabetes or minimize its impact on your body. A healthy lifestyle will also reduce your risk of developing other medical conditions.
- [Know your numbers](#): Through home monitoring and regular visits with your health care team, you can keep track of your blood sugar, blood pressure, blood cholesterol and weight. These critical health numbers provide insight into how well your treatment plan is working to manage your diabetes and safeguard your overall health.
- [Work with your health care team](#): Diabetes can effect your vision, feet, legs and heart and can require special medications and a special diet. So, your health care team may include a number of medical professionals with various specialties. Your team can guide you through your diabetes treatment plan and help minimize its effects on your body.