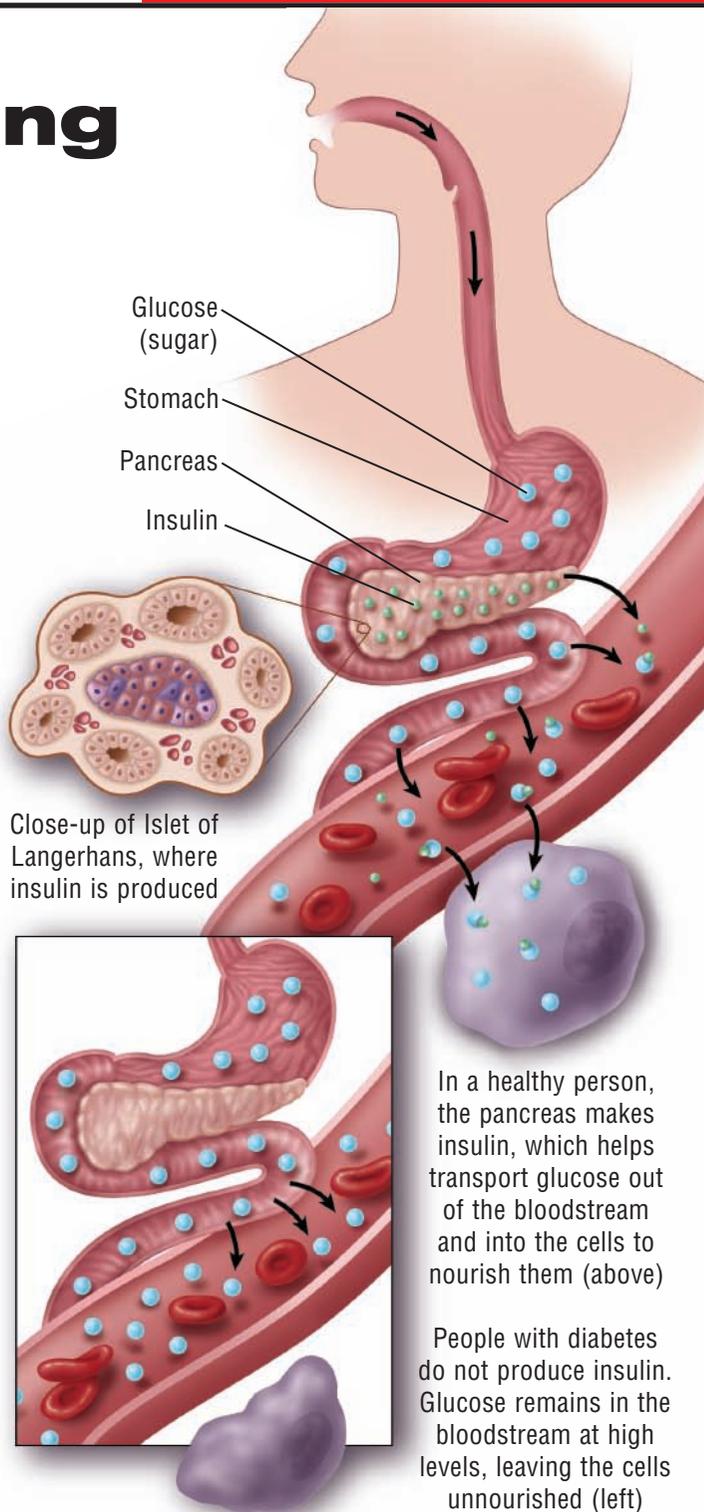


Controlling Glucose Levels

Monitoring blood glucose (blood sugar) is an important part of the total treatment program for diabetes. Self-monitoring of blood glucose (SMBG) is a test that all diabetics should be able to perform on themselves. Patients who know their level of blood glucose throughout the day can use that information to keep it under control. With a blood glucose value, a patient can decide how best to adjust dosing of insulin and other medications, food intake, and physical activity. For diabetics, the key to continued health and avoidance of long-term complications from their disease is strict blood glucose control.

Diabetics should test their blood glucose regularly each day, as prescribed by their doctor. How often and when blood glucose should be monitored is different for each patient. Along with regularly scheduled monitoring, additional monitoring times may be needed in certain situations when blood glucose can rise too high or dip too low.

There are many types of portable glucose-monitoring devices, and they vary in cost, size, speed, and memory. These devices require a small amount of blood, usually taken from the fingertip. Newer, less invasive glucose-sensing systems are now available that can measure glucose in the skin's fluids through intact skin without a blood sample. These glucose-sensing systems are helpful in tracking patterns in glucose levels, but their results must be confirmed by a standard blood glucose reading before changes in dosing of insulin or other medications are made. It is not recommended that these new "noninvasive" glucose-monitoring systems replace blood glucose monitors.



Monitoring Promotes Better Health

For a diabetic, SMBG is a critical part of maintaining tight control over blood glucose and avoiding long-term complications. A little over 30 years ago, blood glucose monitors were first used by diabetic patients at home to better manage their blood glucose. Within 10 years of its introduction, the blood glucose monitor was shown to be an important part of successful diabetes treatment and was recommended for routine home use by patients with diabetes. Today's blood glucose monitoring machines are smaller and easier to use, and they record valuable information about blood glucose levels for patients and doctors.



A glucose meter helps diabetic patients avoid both high (hyperglycemia) and low (hypoglycemia) blood glucose levels.

Different Devices and How They Work: Glucose meters vary in their size, speed, displays, cost, and memory. To use most of these devices, a small sample of blood from a finger stick is placed on a test strip, and the strip is then placed in the meter. Certain models allow blood samples to be taken from areas other than the fingertip (such as the arm or thigh), but some doctors do not recommend these “alternative sites,” as blood glucose levels change more quickly in the fingertip than in alternative sites. The glucose meter measures the amount of glucose in the blood and may display that information or store it for later use. Newer models can be connected to a personal computer, which can then store the results and generate a printout.

Since each model works in a unique way, patients should fully know how to use their devices. Your pharmacist can help you understand how to care for glucose meters, as well as any special instructions that come with them. These instructions explain factors that can interfere with the test results, the type of test strips that can be used with the device, and how to test the device to make sure it is working properly. Many doctors recommend that patients bring their glucose meters to office appointments so that they can compare the portable glucose meter readings with laboratory measurements of glucose in the blood. There are also testing procedures for each device that patients can use to check the accuracy of their glucose meter readings.

Frequency of Monitoring: Each patient should be given guidelines for the frequency of SMBG by his or her doctor or diabetes educator. Generally, patients with type 1 or type 2 diabetes who use insulin should test their blood glucose three or four times daily, perhaps just before meals, two hours after meals, and/or at bedtime. Patients with type 2 diabetes who are taking oral medication often test two to four times daily, depending on how well their glucose is controlled.

When to Check Levels: The blood glucose level before a meal can guide diabetic patients to adjust their dosing of insulin and other medications or the content of their meals. Tracking the rise in blood glucose one or two hours after a meal will tell how well the level of blood glucose is controlled during the daytime, when it is at its highest point. At bedtime, the blood glucose level will alert the diabetes patient to potential problems during the night and allow him or her to make adjustments in medication or food before retiring.

At certain times, blood glucose levels should be checked more often than prescribed by the regular testing schedule. An example of such a time would be the week after changes in the dose of insulin or drugs used to lower blood glucose. Since other medications unrelated to diabetes can affect blood glucose levels, checking glucose more frequently when the patient is beginning a new medication is often recommended. Naturally, during periods of high stress or illness, blood glucose levels can be higher than normal. If diet or exercise regimens are changed, it is always a good idea to test blood glucose more frequently until a new routine is established.

Your pharmacist can show you how to use your glucose-monitoring device and can answer any questions you may have about your medications for diabetes and control of blood glucose.