

Getting Up to Date on Glucose Meters

NOTE: FDA is reminding people with diabetes to use only the test strips that are recommended for use with their glucose meter. FDA is aware of instances where incorrect results were obtained when brands and models of meters and test strips were not used in proper combination.

Using a glucose meter to monitor blood sugar is a daily part of life for millions of Americans. Glucose meters are usually small battery-operated devices, which make it convenient for people to check their glucose levels anywhere. Most work by "reading" a drop of blood the user has placed on a disposable test strip.

To begin testing, users place the test strip into a slot in the meter, prick a fingertip and then place a drop of blood onto the strip. Before pricking the skin, the user should clean the selected testing site to ensure it is free of sugar residues. If the site is not clean, the readings may not be accurate.

In a short time, the meter will show a result in its digital display window. Users record their test results and talk with their health care provider to help with overall disease management. Users may also test control materials to ensure that the meter and test strip are working correctly.

FDA reviews all glucose meters and test strips before they can be marketed to the public. The agency also requires that manufacturers demonstrate that their test system provides acceptable accuracy and consistency of results.

Recently, we have seen the emergence of advanced glucose meters that include features such as download capabilities that allow the transfer of test results to a home computer. Some meters can now test blood taken not from the fingertips, but from "alternate sites" such as the forearm and palm.

Tips for Proper Use

Read instructions carefully. Glucose meters and test strips must come with instructions for use. Your user manual should also include a toll-free phone number that you can use to contact the manufacturer. How often you use your glucose meter, and the results you should expect, should be based on the recommendations of your health care provider.

Use the test strips that are recommended for your glucose meter. It is important to only use the test strips that are specified for your glucose meter. Otherwise, the device may fail to give results or may generate inaccurate results.

Know that readings taken from "alternate sites" may not always be as accurate as readings from the fingertips. These readings can differ at times when glucose levels are changing rapidly. This is common after a meal, after taking insulin, during exercise, or when you are ill or under stress.

Use blood from a fingertip rather than an alternate site if you think your blood glucose is low, you don't normally have symptoms when your blood glucose is low, or the results from the alternate site doesn't match how you are feeling.

Know the factors that affect meter accuracy. These may include

- testing conducted on unclean skin
- improper storage of test strips
- the amount of red blood cells (hematocrit) in the blood
- other substances present in the blood such as uric acid, glutathione, and vitamin C
- altitude, temperature, and humidity
- use of test strips developed as a less expensive option than the strips intended for a certain meter
- test strips that cannot distinguish between glucose and other sugars. (See "Test Strip Safety: Vital Precautions," below)

Perform quality-control checks with test control solutions to ensure that the test strips and meter are working properly together. Some meters may also provide electronic test strips that induce a signal to indicate if the meter (and only the meter) is working properly. In addition, perform quality control checks with control solutions regularly to ensure the meter is working properly.

Ask your health care provider to watch you test yourself. He or she can tell you if you are using the meter correctly.

Know when and how to clean your meter. Some meters need regular cleaning. Others don't need regular cleaning, but contain electronic alerts indicating when you should clean them. You should follow the directions given in the manual on how to clean the meter. Only the manufacturer can clean some meters.

Understand what the meter display means. The range of glucose values can be different among meters. Be sure you know how high and low glucose values are displayed on your meter. Sometimes they are displayed as "LO" or "HI" when the glucose level is beyond the range than the meter can measure.

Report problems to the manufacturer and to FDA. If you suspect that a death or serious injury was related to false glucose readings, follow the mandatory reporting procedure established by your hospital or user facility. Report adverse events not related to serious injuries to the device manufacturer. You can also report events to MedWatch, the FDA's voluntary reporting program.

Source: FDA

<http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm049051.htm>