

## BLOOD GLUCOSE METER AND SUPPLIES

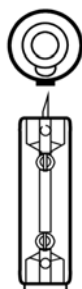


**PURPOSE:** Blood glucose meters (or monitors) are used to test your blood sugar level. In order for the human body to function normally, the level of sugar in the blood must be within a specific, and narrow range. Blood glucose meters are used by individuals with diabetes mellitus, a condition where the body cannot process the sugar contained in food into energy.

**METERS:** There are many types and brands of blood glucose meters and each model may have different features. Glucose levels in *plasma* (one of the components of blood) are generally 10-15% higher than glucose measurements in *whole* blood (and even more after eating). This is important because home blood glucose monitors measure the glucose in whole blood while most lab tests measure the glucose in plasma. There are many monitors on the market now that give results as "plasma equivalent". This allows patients to easily compare their glucose measurements in a lab test and at home.

Remember, this is just the way that the measurement is presented to you. All portable blood glucose monitors measure the amount of glucose in *whole* blood. The monitors that give "plasma equivalent" readings translate the whole blood measurement to make it seem like the result that would be obtained on a plasma sample. It is important for you to know whether your meter gives its results as "whole blood equivalent" or "plasma equivalent." Make sure you completely read the operating guide that came with your glucose meter.

**TEST STRIPS:** In order for a blood glucose meter to measure the level of sugar in the blood, the blood sample must have a way of getting from the individual to the meter. Blood glucose meters use special strips that collect the blood sample. The strip is then inserted into the meter where it can be analyzed. Some blood glucose meters have strip cassettes that automatically advance the strip as needed. The strips that are provided with glucose meters have expiration dates and should never be used after expiration. Strips should never be used if they are discolored, wrinkled, torn, cut or altered in any way. Strips are brand specific and cannot be interchanged or reused; they are also light sensitive and must be protected from light, preferably in the original packaging. Strips may also have a code number associated with a specific supply; this code must be entered into the meter so the meter can accurately analyze the blood sample.



**LANCETS:** In order for a blood sample to be analyzed, a sample must be drawn from an individual. A lancet is a plastic device that has a very thin needle that is accessed by twisting the top off. The lancet can be used by itself or inserted into a lancing device. The lancet is inserted into the lancing device, the top is twisted off, and then the lancing device is spring loaded. The device is then placed on the skin and activated, thus quickly pricking the skin. Lancets are used only once and then discarded.

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**USE:** Performing a blood glucose test involves sequential steps and each step relies upon the successful completion of previous steps. Do not take shortcuts. The blood glucose meter must be powered on and tested for calibration, if necessary. Wash your hands with soap and water to prevent any skin oils from coming in contact with the meter or supplies. The site for drawing the blood sample should also be selected and cleaned with soap and water and allowed to dry. The lancet is inserted into the lancing device. The lancing device is placed directly on to the skin and activated. The first small sample of blood is wiped off and then the finger is gently massaged to collect a blood sample size to saturate the specific area of the test strip. **DO NOT SQUEEZE THE BLOOD SAMPLE SITE HARD**, this will cause the blood to breakdown and will drastically affect the blood glucose reading. The test strip is then inserted into the blood glucose meter and the activate button is pressed to analyze the sample. The reading will be displayed.

Your blood glucose level will change during the day and can be affected by your diet, exercise, stress, illness, and medication. Understanding how to interrupt your glucose values is key to your overall health; make sure you keep your glucose value within the target range set by your physician. Call your physician immediately if your glucose level is below 50 or above 250.

Keeping track of your glucose readings is very important. Your physician needs to know how controlled your diabetes is. Keeping a log is important because it helps you see trends in your glucose values and it helps your physician plan your care. Some glucose meters store a large amount of tests and some can be downloaded into a computer. Whichever way you have to track your test results, please do so regularly and consistently.

**SITE ROTATION:** Your diabetic educator will go over procedures with you for selecting and rotating blood sampling sites. It is important to rotate sites because the lancet causes damage to the skin and rotating sites allows time for previous blood sampling sites to heal.

**MAINTENANCE:** Many glucose meters perform a calibration when they are powered on; some meters require calibration with the use of a special “check strip.” Some meters use calibration solutions. If your meter requires calibration, *always* calibrate as the manufacturer recommends. By performing the recommended calibration you can assure your glucose meter is operating correctly.

All blood glucose meters are battery-powered devices and will occasionally need replacement batteries. Some brands utilize a long-life power cell that cannot be replaced; instead, the monitor is replaced when the power is dissipated. Some batteries are the size of a watch battery and can be very dangerous (and poisonous) in the hands of children.