

How to Calculate Glucose Concentration in the Blood

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One of the best indicators of [general health](#) is the concentration of glucose in the blood. Glucose is a naturally occurring fuel that helps the body maintain tissue health and nerve transmission, and is essential in producing energy for daily living and [exercise](#).

Difficulty: Moderate

Instructions

The Importance of Maintaining Normal Blood Glucose

- 1 Maintaining normal blood glucose levels is essential for proper health and [fitness](#). Your glucose levels will tell you and your doctor about the content of your diet and how well your body processes food, and will help identify symptoms that precede diabetes or other diseases.
- 2 The normal range for blood glucose on a fast is 80 to 110 milligrams per deciliter. It is normal for blood glucose concentrations to be slightly higher after meals, so you'll need to fast before taking a blood glucose test.
- 3 Individuals who consistently register elevated blood glucose levels may have diabetes or another metabolic disease. Generally, when a blood test registers abnormal levels, it is repeated to verify the results.

How to Calculate Blood Glucose

- 1 Blood glucose must be measured at your doctor's office or a clinical laboratory. A trained technician, called a phlebotomist, will draw a small sample of your blood and send it for analysis. The blood sample is spun in a centrifuge to separate the red blood cells from the plasma, where the glucose is measured. If your doctor suspects you have an abnormal glucose level in your blood, he may order a fasting glucose tolerance test, or FGTT. During an FGTT, you will arrive at the office or lab after fasting overnight and drink a high-concentration glucose drink. At hourly intervals, the technician will draw a sample of your blood and analyze how quickly your glucose levels return to normal.
- 2 A more accurate way to measure the glucose concentration of your blood is to have your hemoglobin A1c measured, which represents the average glucose in your blood over a 120-day period and takes into consideration the variations of your glucose.
- 3 If you're diabetic or have another metabolic disease, your doctor may prescribe a glucose monitoring meter so you can test your blood glucose yourself as many times as necessary. There are dozens of different models available, and many are designed to work on almost any part of the body, so you're not restricted to painful finger pricks.

What to Do After the Test

- 1 If your results are out of the normal range when they come back, your doctor may recommend other tests and procedures. These may include losing weight,

modifying your diet, getting more exercise or visiting a registered dietitian.

- 2 Always keep copies of your glucose tests so your doctor can compare your current results with future tests. The long-term pattern of your glucose tests is more important than any one test.
- 3 If your blood glucose levels are abnormal during one test, there's no reason to assume they will continue to be outside the normal range. With proper guidance from your physician, registered dietitian and exercise specialist, you may be able to manage your glucose levels without medication.

Tips & Warnings

- Fast for at least 12 hours before a glucose test. Stay hydrated by drinking water during the fast. Have your blood analyzed by your doctor or a certified clinical laboratory.
- Try not overreact to abnormal glucose test results; they're just a snapshot in time.