



A1c v Fasting Glucose v Fasting Insulin: Which test is the most efficacious to help you gauge your blood sugar balance?

Compliments of EatRight-LiveWell™ with Tam John | FNTP | Functional Nutrition expert

A1c and fasting glucose often take center stage as tools to measure blood sugar levels. However, the fasting insulin test is a powerful tool that can reveal hidden clues about your body's ability to process sugars and carbohydrates, a view for metabolic health.

In this complimentary guide, [EatRight-LiveWell™ with Tam John](#) dives into the key differences between HbA1c (A1c), fasting glucose, and fasting insulin tests, helping you be informed for your health, and to speak with your Physician or Nurse Practitioner (NP) about which test(s) to order and your treatment plan.

Let's first look at the A1c and fasting glucose tests. A1c provides a snapshot of your average blood sugar levels over the past two to three months. On the other hand, Fasting Plasma Glucose (FPG), referred to as 'fasting glucose' measures your blood sugar after an overnight fast, typically for at least eight hours.

The A1c test measures the amount of glucose attached to hemoglobin molecules in your red blood cells. Hemoglobin is responsible for carrying oxygen throughout your body, and glucose molecules can attach themselves to hemoglobin. The A1c measures the percentage of hemoglobin that has glucose attached to it. Glucose is attached to hemoglobin as a result of a process called glycation. In short, this is 'sticky blood' and relates to the sugars/glucose in blood largely because of sugar and processed food consumption. The result reflects your average blood sugar levels over the past two to three months. A healthcare professional will draw a blood sample and send it to a laboratory for analysis. The results are typically expressed as a percentage. For example, an A1c result of 6% means that 6% of your hemoglobin has glucose attached to it.

One of the advantages of the A1c is that it does not require fasting. This means you can have the test done at any time of the day, regardless of when you last ate. It is important to note that certain medical conditions and factors like anemia or certain blood disorders can affect the accuracy of the A1c test. Be sure to speak with your Physician or NP whether you have those certain conditions.

Fasting glucose, also known as fasting blood sugar, measures your blood sugar levels after an overnight fast. Fasting glucose levels are typically measured in milligrams per deciliter (mg/dL) or millimoles per liter (mmol/L).



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To measure fasting glucose levels, you will be asked to refrain from eating or drinking anything (except water) for at least eight hours before the test.

Fasting glucose levels are influenced by various factors, including your diet, physical activity level, stress, medications, and overall health. It's important to follow the fasting instructions provided by your Physician or NP to ensure accurate results.

According to Everlywell (HbA1c vs. Fasting Glucose | Compare HbA1c to Fasting Blood Glucose | Everlywell) “Your A1C results are only a part of the diabetes diagnosis process. Researchers have found that A1C tests are not always reliable indicators of diabetes [references at article end]. In addition to the A1C test, healthcare providers use the fasting plasma glucose test to confirm a diagnosis of diabetes.

Both tests are accurate in assessing blood sugar levels within their respective timeframes. However, it's important to note that individual variations and factors like anemia or certain blood disorders can affect the accuracy of the A1c test.

Fasting glucose is valuable for diagnosing diabetes and monitoring immediate blood sugar levels. It is commonly used in conjunction with other tests like the oral glucose tolerance test (OGTT) to assess how your body handles glucose.

In summary, both A1c and fasting glucose tests have their strengths and limitations. The choice between the two depends on factors such as your overall health, treatment goals, and medical conditions. Consulting with your Physician or NP will help determine which test is more appropriate for your specific situation.

Interpreting A1C and Fasting Glucose results

Interpreting A1c and fasting glucose results requires an understanding of the reference ranges and target values for blood sugar control. The interpretation may vary depending on factors such as age, overall health, and treatment goals.

Mayo Clinic ([A1C test - Mayo Clinic](#)) provides A1c results interpretation:

- Normal: Less than 5.7%
- Prediabetes: Between 5.7% and 6.4%
- Diabetes: 6.5% or higher



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For fasting glucose levels, the Centers for Disease Control and Prevention (www.cdc.gov/diabetes/basics/getting-tested.html) uses the following classifications:

- Normal: Less than 100 mg/dL (5.6 mmol/L)
- Prediabetes: Between 100 mg/dL (5.6 mmol/L) and 125 mg/dL (6.9 mmol/L)
- Diabetes: 126 mg/dL (7.0 mmol/L) or higher

Keep in mind that target values may vary depending on individual circumstances and treatment plans. It's essential to work with your Physician or NP to set personalized blood sugar targets and determine the appropriate interpretation of your test results.

Note: The oral glucose tolerance test (OGTT): Fasting glucose is often used in conjunction with the OGTT to assess how your body handles glucose.

Regular monitoring of blood sugar levels using these tests is crucial for effective diabetes management and also plays a role in measuring how effective your nutrition and lifestyle is working to improve and stabilize your health.

Cleveland Clinic ([Prediabetes: What Is It, Who's at Risk, Symptoms, Can It Be Reversed](https://clevelandclinic.org)) states those with higher risk include:

- Age (being 45 or older). It is important to note that children are also susceptible to type 2 diabetes. Speak with your Pediatrician about your child's symptoms and testing. The prevalence of prediabetes is one in three adult Americans and most don't know they are prediabetic, making testing an important piece of a healthy living plan to control and improve health markers.
- Parent with type 2 diabetes.
- Ethnicity. Being African American, Hispanic, Native American, Asian-American or a Pacific Islander.
- Previous gestational diabetes.
- Polycystic ovary syndrome (PCOS).
- Certain medications such as steroid, certain antipsychotics and some HIV medications.
- Hormonal conditions including Cushing's syndrome and acromegaly.
- Sleep disorders, such as sleep apnea.
- Obesity
- Exercising less than three times a week.
- High blood pressure or high cholesterol levels.



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- Metabolic syndrome, a combination of high blood pressure, high cholesterol and large waist measurement.
- Smoking

Now let's take a look at fasting insulin.

Having high levels of fasting insulin can be an indication of insulin resistance, a condition where cells in the body become less responsive to insulin. This can lead to a host of health problems, including weight gain, elevated blood sugar levels, and an increased risk of developing diabetes.

By measuring your fasting insulin levels, you can gain a better understanding of your metabolic health and take proactive steps to improve it. Whether you're looking to shed a few pounds, lower your risk of chronic diseases, or simply optimize your overall well-being, the fasting insulin test is a valuable tool that shouldn't be overlooked.

Insulin is a hormone produced by the pancreas that plays a crucial role in regulating blood sugar levels. When you eat, your body breaks down carbohydrates into glucose, which enters the bloodstream. In response, the pancreas releases insulin to help transport glucose from the blood into cells, where it can be used for energy.

The fasting insulin test measures your insulin levels after an overnight fast, typically for 8 to 12 hours. By measuring fasting insulin levels, healthcare professionals can assess how effectively your body is able to regulate blood sugar levels and identify potential issues with insulin sensitivity.

How does fasting insulin test work?

The test results will indicate the amount of insulin present in your blood during the fasting state. If your fasting insulin levels are high, it may indicate insulin resistance and the need for further evaluation and intervention. On the other hand, low fasting insulin levels may suggest hypoglycemia or other underlying conditions that require attention.

Interpreting fasting insulin test results

To interpret fasting insulin test results, healthcare professionals consider a range of values and individual factors. It is important to note that normal ranges may vary slightly between different laboratories. Your Physician or NP will review your results and provide personalized recommendations based on your specific situation.



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Normal fasting insulin levels

Normal fasting insulin levels typically range between 2 and 25 micro international units per milliliter ($\mu\text{IU}/\text{mL}$). However, it's essential to remember that optimal levels may vary depending on various factors, including age, weight, and overall health. Your Physician or NP will take these factors into account when interpreting your results.

High fasting insulin levels and insulin resistance

If your fasting insulin levels are consistently high, it may indicate insulin resistance. Insulin resistance occurs when the body's cells become less responsive to the effects of insulin, leading to an increased demand for insulin production. Over time, this can strain the pancreas and result in elevated blood sugar levels.

Insulin resistance is closely linked to a range of health conditions, including type 2 diabetes, obesity, metabolic syndrome, and cardiovascular disease. If left unaddressed, insulin resistance can have long-term negative effects on your health. However, early detection through fasting insulin testing can enable you to take proactive steps to manage and improve your metabolic health.

Low fasting insulin levels and hypoglycemia

Low levels of insulin can result in hypoglycemia, a condition characterized by abnormally low blood sugar levels. Hypoglycemia can cause symptoms such as dizziness, fatigue, confusion, and even loss of consciousness in severe cases.

If your fasting insulin levels are consistently low, it's crucial to investigate the underlying cause. Hypoglycemia can be caused by various factors, including certain medications, stress, hormone deficiencies, liver or kidney problems, or excessive alcohol consumption. Root cause nutrition EatRight-LiveWell provides is integral to balance macro and micronutrients, and relieve physiological stress to support blood sugar balance.

Knowledge is power to improve the trajectory of your health.

Information from A1c, fasting glucose and fasting insulin testing is power to inform you and inspire healthful changes. Understanding the trends and patterns of your blood sugar levels can help you make informed decisions about your diet, exercise, stress relief, and overall lifestyle.

[Eat Right - Food for Life™](#) is a 12-week personalized functional nutritional therapy program that guarantees your satisfaction. You can achieve greater blood sugar balance and health ease with a



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sound nutrition plan. Our work together in 1:1 personalized virtual/zoom consultations will include:

- Evolve the effectiveness of your prediabetes/type 2 diabetes/hypoglycemia/insulin resistance nutrition plan to stabilize and reverse your poor blood sugar balance.
- Identify potential triggers for high or low blood sugar levels. Food, beverages, stress relief and other lifestyle factors are all pieces of the puzzle to balance blood sugar and nourish your metabolic health.
- Develop and implement a personalized functional nutritional plan as a lifestyle, not a fleeing diet.
- Work with your Physician to reduce medications safely if appropriate.
- Incorporate holistic choices to mitigate complications of poor health including stroke, heart disease, kidney disease, type 2 diabetes, and more as an adjunct to healthcare.

[EatRight-LiveWell™ with Tam John's expertise](#) is providing insights for each client's unique patterns, triggers and complexities all about correlating food/beverage consumption, symptoms and an evidence-based solution-oriented process to hone agreeable choices.

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“Tam, I am thrilled with my A1c from 6.8 to 6.1 in three months. Thank you for your guidance to help me make nutrition changes for this great improvement in my health.” L.L.

Imagine L's continued health improvements as she stays with her personalized nutritional plan. This is the health turnaround success that working with EatRight-LiveWell™ sets up for each client.

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Remember, knowledge is power when it comes to managing your blood sugar levels. Stay informed, stay proactive, and prioritize your health every step of the way to realize a better feeling life.

Learn more in an enlightening call with Tam John, Functional Nutritional Therapy Practitioner. Book your call here: [Fix My Blood Sugar Balance Naturally](#)



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