Diabetes: HbA1c and self-monitoring

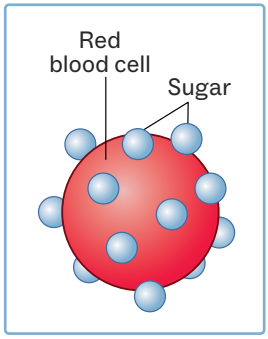
How is my blood glucose measured?

If you have diabetes, 2 types of checks will help you keep track of your blood glucose (blood sugar): the **HbA1c** lab test done by your doctor, and the self-monitoring you do at home. **You need to do both.**

What is HbA1c?

The HbA1c test (also called **A1c**) is a good way to check your long-term diabetes control. It shows the average level of your blood glucose over the previous 3 months. Here's how it works:

- **Hemoglobin** [HEE-meh-glow-bin] (Hb) is a protein in your red blood cells. Hemoglobin attaches to glucose (sugar) in your bloodstream.
- The glucose stays attached to the Hb for the life of the cell, or about 3 months. HbA1c measures the percentage of hemoglobin that is attached to glucose.



What's your score?

Your HbA1c _____

Your eAG _____

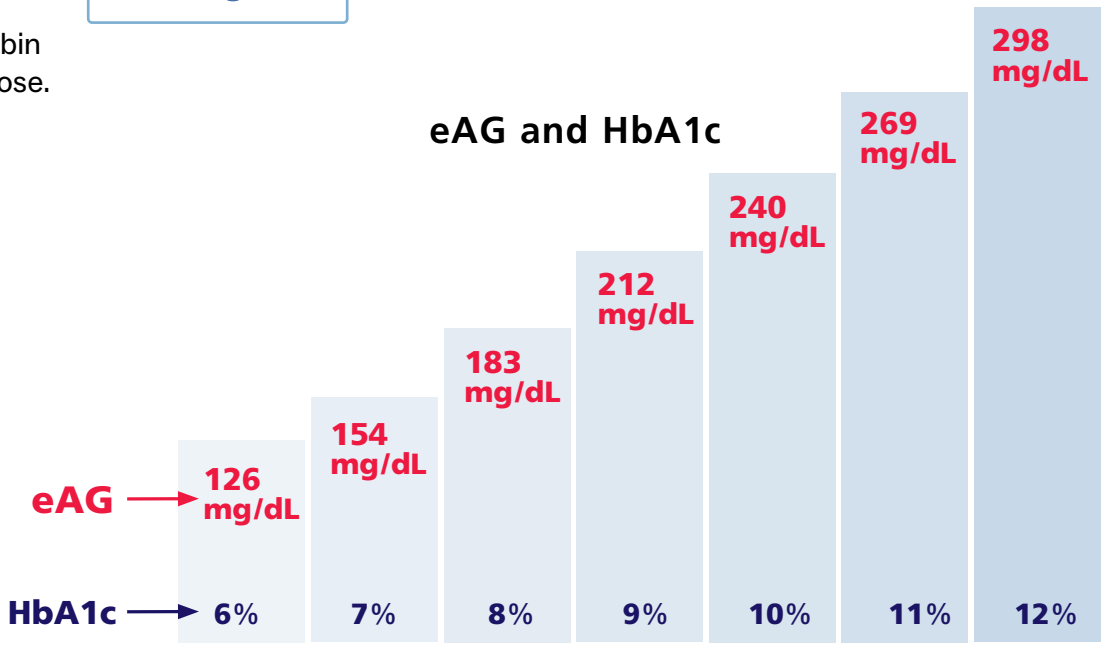
Date _____

What number am I aiming for?

The American Diabetes Association recommends that most people with diabetes aim for an HbA1c of less than 7%. If you have other chronic conditions, or if your life expectancy is less than 10 years, your goal should be between 7% and 8%. HbA1c levels below 6% can increase your risk for low blood glucose. Talk with your diabetes care team about what your HbA1c goal should be.

What is eAG?

Your eAG is your **estimated Average Glucose**. It uses your HbA1c result to show your average blood glucose levels over the previous 3 months. The graph below shows how HbA1c and eAG match up. Note that an HbA1c of 7% matches up to an eAG of 154 mg/dL.



Here's how your HbA1c results compare with your average fasting blood glucose test results.

If I get HbA1c tests, do I still need to self-test?

Yes. An HbA1c check is the easiest and most accurate way to paint the big-picture view of your blood glucose control. But there are things that only self-monitoring, and good records of your daily readings, can tell you.

You need to self-monitor often in order to:

- Know whether you're "swinging." This is when you have periods of very high blood glucose followed by very low levels. It is not good for your body. A1c tests can't pick this up.
- Make connections between your blood glucose and your daily lifestyle choices (food, exercise, alcohol, etc.) For example, if your glucose check is higher than normal after lunch, you can think about what you just ate and make different choices at lunch the next day.

That's why you need both regular HbA1c tests AND good records of your self-monitoring.

I know my glucose by how my body feels. Do I still need to monitor?

Yes, you still need to monitor. Relying on symptoms to help you guess what's happening with your blood glucose is asking for trouble. Here's why:

- Symptoms of low and high blood glucose can be similar, and are easily confused. You need to be sure what the problem is before you can correct it.
- Symptoms are "old news." By the time you begin to feel different, your blood glucose may be seriously out of control.
- Symptoms are often easy to ignore. People tend to become used to their symptoms — and some people no longer have symptoms at all.
- Symptoms can come from things other than your diabetes.

You need clear, reliable, early signs of blood glucose trouble. Only blood glucose self-monitoring and regular HbA1c checks can give you this information.

Target blood glucose ranges (plasma glucose) for people with diabetes

What numbers am I aiming for?

This box provides guidelines for blood glucose ranges (plasma values). But you should ask your healthcare providers what goals are best for you. You might need to aim for different numbers, depending on your unique condition.

	typical (ADA) target	my target
Fasting (before breakfast)	70 to 130 mg/dL	
Before a meal	80 to 130 mg/dL	
2 hours after a meal	less than 180 mg/dL	
Other times		

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