

Monitoring Your Diabetes

Blood and urine tests to help you stay on track

This handout describes ways to monitor your blood glucose and urine at home. It also explains a lab test that gives you information about your blood glucose levels over the last 3 months.

How We Support You

At UW Medicine, we:

- Believe that you are an active participant in every aspect of your diabetes care.
- Work together as a team to understand your blood glucose control and set realistic goals.
- Strive to help you feel well and energetic, with no symptoms of high blood glucose, and only rare symptoms of low blood glucose. Once this is achieved, your target blood glucose can be identified.



Your UW Medicine care team will work with you to help you reach your personal diabetes goals.

There are several ways to monitor blood glucose control. Test results are not “good” or bad.” Rather, they should fall within a range based on your individual needs.

All the test results, high or low, give you and your healthcare team helpful information. We use this information to help you reach your personal diabetes goals.

Home Blood Glucose Testing

A blood glucose meter is a small, portable device that quickly tells you what your glucose level is.

Home blood glucose testing is very accurate, and it is a very important part of diabetes self-management. All people with diabetes can benefit greatly by learning how to test their blood glucose.



Your home blood glucose test involves a nearly painless fingerstick.

A home blood glucose test involves:

- About 1 to 2 minutes for each test
- A nearly painless fingerstick
- Placing a drop of blood onto a test strip
- Putting the strip into the meter for the result
- Recording the result in a diary or logbook

Your testing and recordkeeping at home help us all learn how food, activity, stress, and other factors affect your blood glucose. If needed, we will teach patients who use insulin how to adjust their own insulin dose based on the results. We will use your own “target” blood glucose goals as a guideline.

Equipment and Supplies

- We will help you choose testing equipment and supplies.
- It is a good idea to check with your health insurance provider before you buy a glucose meter. Some insurance plans will only pay for a certain brand of meter and supplies. Other plans may not cover a meter and supplies at all.

Continuous Glucose Monitoring

A continuous glucose monitor checks your glucose levels every few minutes. The continuous glucose monitor system has 3 components:

- **Sensor:** A disposable glucose sensor that is placed under the skin. The sensor is worn for several days. It measures the glucose level in the tissue around it.
- **Transmitter:** The transmitter connects to the sensor. It collects information from the sensor and sends it to a receiver.
- **Receiver:** The glucose readings are displayed on the receiver or a smart phone. The glucose value can be displayed in different ways: as a glucose value; an up or down arrow; or a line graph that can show you “real-time” what your glucose level is doing. You can set alarms to alert you if your glucose level is out of your target range.

Your healthcare team will work with you to decide if continuous glucose monitoring would be helpful for your diabetes management plan. A continuous glucose monitoring system does not take the place of the home blood glucose meter. Continuous glucose monitoring helps you to see the direction your glucose level is moving at all times.

Home Urine Ketone Testing

People with type 1 diabetes also learn how to test their own urine for *ketones* (acetone). Normally, the body uses glucose as its main source of energy, or fuel. For the glucose to be used properly, enough insulin must be present to allow the glucose to enter the body's cells. Without enough insulin, the body will begin to burn stored fat instead of glucose for energy. Burning fat causes ketone levels to rise in the body.

Normally, ketones are not present in blood or urine. Ketones in the urine indicate the breakdown of fat, usually due to a lack of insulin. This can result from problems such as illness, incorrect dosage or not giving insulin correctly, or even from fasting.

Ketone test strips can be dipped into a small urine sample. The strip will show if ketones are present in about 15 seconds. We will teach you how to interpret your test results.

The presence of urine ketones is serious. It may mean that you are developing a life-threatening condition. Report urine ketones to your healthcare provider right away.

Urine ketone tests strips are available in 2 forms:

- Bottle or vial
- Single, foil-wrapped strips

Once a bottle or vial is opened, the strips are usually OK to use for 3 months. Foil-wrapped ketone strips are OK to use until the expiration date on the box. Bottles or vials of ketone test strips may cost less than the foil-wrapped strips.

The “3-Month Blood Glucose Test”

This test, also known as *glycosylated hemoglobin A1C*, or A1C, is a laboratory test that gives information about blood glucose control over 2 to 3 months. It measures the amount of glucose that is attached to the red blood cells.

The result of the A1C test is measured as a percent. Each type of A1C test has its own “normal” range. Ask what that range is for the test you are taking. For example, if the “normal” (non-diabetic) range is 3.5% to 6.5%, then any value over 6.5% would mean that your average blood glucose levels are higher than normal.

A home A1C test is now available. It does not replace the lab test your healthcare provider asks you to have.

We will use your A1C results together with your daily test results to determine your individual blood glucose “targets.”

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

Endocrine and Diabetes Care Center: 206.598.4882

UW Medicine Neighborhood Clinics: 206.520.5000