

Glucose and Fructosamine Testing

- Blood glucose and fructosamine tests are helpful tools for monitoring diabetic patients.
- The results of glucose and fructosamine testing can help your veterinarian ensure that your pet's diabetes is being adequately managed.
- Only small amounts of blood are required to perform these tests.

What Are Glucose Testing and Fructosamine Testing?

In diabetic patients, spot-checking the blood glucose (or blood sugar) is a quick and direct way to tell what the level is. The rapid result permits quick detection and management of a dangerously low or an extremely high level. However, blood glucose testing provides only a “snapshot” of the total blood glucose “picture.” The test result does not indicate what the blood glucose level will be 2 hours later, 8 hours later, or the next day. Your veterinarian needs to do other testing to obtain this information.

Performing a blood glucose curve can provide some of the missing information. A blood glucose curve involves repeatedly measuring the blood glucose level every 1 to 2 hours over a period of time—usually 12 to 24 hours. Like a regular blood glucose measurement, a blood glucose curve also directly measures the blood sugar, but (compared with a single blood glucose reading) it tells your veterinarian more information about how the blood glucose level may be changing over time.

Fructosamine testing involves checking the fructosamine level in the blood, and this testing is another way to monitor diabetic pets. Fructosamine is a protein that binds very strongly to glucose in the blood. Because fructosamine occurs in proportion to blood glucose, it can provide an accurate estimate of the amount of glucose in the blood. When the fructosamine level is measured, it helps determine the average glucose level for the previous 2 to 3 weeks. Fructosamine monitoring is often the preferred method for monitoring the glucose level in cats because it is

not affected by stress, which can cause a sharp increase in the blood glucose level in cats. Your veterinarian may recommend using fructosamine level monitoring alone or in combination with blood glucose testing, glucose curve monitoring, and other tools to help monitor your diabetic pet.

How Are Glucose Testing and Fructosamine Testing Performed?

Spot-checking your pet's blood glucose level takes only a few minutes and requires only a small amount of blood. Your veterinary team will likely ask you when your pet's most recent meal was eaten and when the most recent insulin injection was given because these variables can affect the blood glucose reading. Blood glucose spot-testing is generally done during an outpatient visit.

Blood glucose curves require a brief stay in the hospital. Your veterinary team will generally ask about your pet's feeding and insulin schedule so the same schedule (or one as close as possible) can be continued while your pet is undergoing the blood glucose curve. During the blood glucose curve, blood is drawn every 1 to 2 hours, and the blood

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glucose level is measured and recorded. The resulting chart or table shows how the blood glucose level has changed during the measuring period. Some veterinarians perform a curve for 8 to 12 hours, and some prefer 24-hour curves. During this time, your veterinary team will try to keep your pet's stress and anxiety to a minimum, as stress can affect the blood glucose level in some patients, especially cats.

Fructosamine testing is generally done during an outpatient visit and requires a small blood sample that is submitted to a laboratory for analysis. Drawing blood generally takes only a few seconds, and the test result is usually available within a few days. The analysis measures the amount of fructosamine in the blood sample. The test results indicate whether the patient has excellent, good, fair, or poor glucose control.

What Are the Benefits of Glucose and Fructosamine Testing?

Diabetes is a complicated illness, and there are many approaches to managing diabetes in pets. Whether your

veterinarian prefers to use blood glucose spot-testing, a glucose curve, fructosamine testing, or a combination of these, he or she will consider these results along with other valuable information, such as appetite consistency, weight gain or loss, and frequency of drinking and urination, to determine if your pet's diabetes is being well managed. If your pet is receiving insulin, this information will help your veterinarian determine if the insulin dosage is acceptable or if an adjustment should be made. Your veterinarian will also discuss with you how often monitoring tests should be repeated. Your veterinarian may recommend additional testing (such as urine testing) to see how well your pet is responding to diabetes management.