

# Home Testing Blood Glucose for Pets

Many caregivers with diabetic pets test their pets' blood glucose at home using a glucometer. Home blood glucose monitoring is beneficial for greater safety, better regulation and lower cost. Testing blood glucose in a cat or dog requires a bit of practice, but those who persevere master the skill eventually. A *glucometer* is the handheld machine used to test blood sugar values. *BG* is the abbreviation for "blood glucose" that we will use in this article. A *glucose curve* is the process of taking several BG values in a single day to determine the lowest BG at peak insulin effect, and to tell how long the insulin you are giving to your pet is lasting in the body. *Glycemic* control is the medical term for controlling blood sugar with insulin injections, diet, exercise and rarely oral medications that lower the blood sugar in some cats (they are not effective in dogs).

## Safety

Just as with human diabetics, it is much safer to know an animal's current BG before injecting insulin; if the level is lower than usual, it may be appropriate to give a reduced dose in order to prevent a hypoglycemic crisis. Urine testing is not precise enough. This may be especially important for cats because of their potential for remission, as pancreatic secretion of insulin may be sporadic as the cat is healing from pancreatitis.

When your diabetic pet is not feeling well, it can be important to know right away whether BG is low, normal or high. Normal BG in a sick diabetic pet receiving daily insulin means illness is probably caused by something other than diabetes.

## Better Regulation

Glucose tests performed in the home environment compared with a hospital setting are generally more accurate. Particularly in cats, the BG level is increased by stress, a common side effect of being at a veterinary clinic for the day. As well, diabetics may have decreased food intake at the vet clinic, which would lower blood sugar from where it usually is at home. Another advantage is that the pet can often be tested more frequently at home, and at a lower cost. Studies have demonstrated that cats whose BG is tested at home achieved better glycemic control [1].

## Lower Expense

Many manufacturers offer glucometers at a low cost or even free after rebate. The greatest cost is the test strips, but this is lower than the cost of taking a pet to a vet clinic to get the necessary number of curves to achieve and maintain regulation -- which may be weekly to bi-weekly at first, and then less often. Remember that even if you do glucose curves at home, it is best to make appointments as necessary to discuss them, making sure you are making the right adjustments for your pet.

## When to Test

The best way to assess glycemic control is to do periodic glucose curves. Here are the instructions for a glucose curve.

- 1) Feed and water your pet as usual on the day of the glucose curve.
- 2) Check BG immediately prior to the usual insulin injection in the morning.
- 3) Check BG every 2 hours, until a low value is achieved, followed by 2 values in a row that increase significantly.
- 4) If BG falls below 100, check every hour until it rises above 100 again. If you fail to do this, you can miss the lowest point, which is the single most important BG value to determining insulin dose.

Spot checking BG from time to time can be helpful if your pet is not feeling well. But don't rely on spot checking for good regulation. The mid-day BG which occurs at the usual low BG point is important to confirm that you are not giving too much insulin. The BG at insulin injection time can also be helpful. If it is less than 100 at the time that insulin is usually given, that insulin injection should be reduced or skipped. If the BG at insulin time is consistently greater than 300, then regulation has not been achieved, and you need to talk to your vet about changes that might need to be made.

Curves are usually done on weekends or days off, so you can get it all done in one day. Curves are stressful to the pet, even at home. Home curves should not usually be done two days in a row, as stress can falsely increase BG values.

### **How to Test**

Please see the separate handouts that were provided to you on the mechanics of home BG testing. If you have Internet access, you might also search Youtube.com for instruction videos – there are many there to view, and sometimes a video is worth a million words.

### **What to do with the BG Information**

No single blood-glucose reading, whether at a vet or at home, is adequate for determining a correct insulin dosage. The first few months can be especially tricky while finding a correct dose, and there are no substitutes for frequent testing and occasional curve-plotting. Always record BG tests in a log for your pet, and make appointments with your vet as often as necessary to go over the results, and how to make changes in your treatment plan to achieve the best health possible for your pet.

#### References

1. Home Monitoring of the Diabetic Cat, Reusch et al.
2. [www.petdiabetes.com](http://www.petdiabetes.com)

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