Vetsulin® CurveKit
Glucose Curve Workpad • How-to Instructions
Interpretation Guidelines • Pet Diabetes Tracker

Unparalleled support for managing canine and feline diabetes—only from Merck Animal Health
HOW TO CHART YOUR PATIENTS’ GLUCOSE CURVES.

Once the patient has been on Vetsulin® (porcine insulin zinc suspension) for 5 to 7 days for dogs or 7 to 14 days for cats, admit the patient either:
1. First thing in the morning before eating and receiving Vetsulin®.
2. Right after the patient eats and receives Vetsulin® at home.

After admitting the patient, it’s important that the patient follows the same routine as it does at home. Provide the same food and exercise on the same schedule it is accustomed to. Be sure to obtain a history from the owner with regard to their observations of the patient’s signs of diabetes at drop-off. A current body weight should be obtained and recorded.

BLOOD SAMPLING:
Measure blood glucose every 2 hours. Ideally, continue for 12 hours if insulin is administered twice daily (BID) or for 24 hours for canine once-daily (SID) insulin administration. If the blood glucose level is <150 mg/dL, consider checking hourly measurements.

CHART:
Plot the blood glucose concentrations against time to create the blood glucose curve.

At the end of the testing period, compare the glucose curve to the interpretation charts on the next page to establish a treatment plan.

NOTE:
A 24-hour curve may be the only way to accurately diagnose Somogyi overswing. Sampling can be done at the marginal vein of the ear or, for dogs, on the mouth mucosa (just flip up the lip) to minimize stress.

INTERPRETING SERIAL GLUCOSE CURVES.

Serial glucose curves are a useful tool in the initial stabilization and monitoring of the diabetic dog and cat, giving the most accurate assessment on which to base changes in insulin therapy. They are vital in investigating the unstable diabetic.

These charts show the curves you would expect to find in the stable diabetic dog and cat as well as the 4 main problem scenarios. The charts for the 4 problem scenarios are plotted against a 24-hour timeline but can be easily adapted to a 12-hour BID dosing timeline.

BID = twice daily; SID = once daily.
CAUSES OF INSULIN RESISTANCE.

Some causes of insulin resistance can be detected immediately. However, identification of many other causes of insulin resistance may require an extensive round of diagnostic tests. Several concurrent disorders can affect insulin status in dogs and cats and interfere with the effectiveness of insulin therapy.

DIAGNOSTIC TESTS TO CONSIDER FOR THE EVALUATION OF INSULIN RESISTANCE IN DIABETIC DOGS AND CATS

- CBC, serum biochemistry panel, urinalysis
- Bacterial culture of the urine
- Serum lipase and amylase (pancreatitis)
- Serum trypsin-like immunoreactivity (exocrine pancreatic insufficiency, pancreatitis)
- Adrenocortical function tests
  - ACTH stimulation test (hyperadrenocorticism)
  - Low-dose dexamethasone suppression test (hyperadrenocorticism)
- Thyroid function tests
  - Baseline serum total and free T₄ (hypothyroidism or hyperthyroidism)
  - Endogenous TSH (hypothyroidism)
  - TSH stimulation test (hypothyroidism)
  - TRH stimulation test (hypothyroidism or hyperthyroidism)
  - T₃ suppression test (hyperthyroidism)
- Serum progesterone concentration (diestrus in intact female dog)
- Plasma growth hormone or serum insulin-like growth factor I concentration (acromegaly)
- Serum insulin concentration 24 hours after discontinuation of insulin therapy (insulin antibodies)
- Serum triglyceride concentration (hyperlipidemia)
- Abdominal ultrasonography (adrenomegaly, adrenal mass, pancreatitis, pancreatic mass)
- Thoracic radiography (cardiomegaly, neoplasia)
- MRI (pituitary mass)

REFERENCES:

QUESTIONS? WE’RE HERE FOR YOU.

For support and answers from Merck Animal Health diabetes professionals, call 800-224-5318. Or visit us online at www.vetsulin.com.
vetsulin®
Intervet Animal Health
Insulin zinc suspension

CONTRAINDICATIONS
- Use in animals allergic to any component of the product should not be undertaken with vetsulin®. vetsulin® is contraindicated during periods of hypoglycemia.
- vetsulin® is a mixture of amorphous and crystalline insulin resulting in immediate and prolonged insulin activity. In dogs, vetsulin® may show two peaks of activity. In a laboratory study, 12 healthy beagle dogs received 2.7 mL of 40 IU/mL porcine insulin zinc suspension. Vials are supplied in cartons of one, 10 mL vial. Cartridges are supplied in cartons of one, 2.7 mL cartridges containing 29 gauge/12 mm pen needles. Thirty-six owners (100%) said they were able to learn how to use the pen. Thirty-four owners (94%) said the pen was easy to use. Cats: A total of 187 client-owned cats (63 males and 25 females) all nourished with various foods were enrolled in a 60-day field effectiveness and safety study with continued use up to Day 180. Seventeen cats were removed from the study prior to the Day 7 evaluation. The remaining cats received vagus nerve rapamycin 3 times at 30-day intervals (Study Period). The blood glucose mean nadir was reduced from 354 mg/dL on Day 0 to 182 mg/dL on Day 60. Thirty cats completed the study. The cats were administered vetsulin® at an initial dose of 1.2 IU/kg twice daily. Scheduled evaluations occurred at Days 1, 10, 30, and 60. Dose adjustments were allowed and varied during the evaluation. The blood glucose curve means decreased from 354 mg/dL on Day 0 to 162 mg/dL on Day 30. The mean blood glucose nadir decreased 85 mg/dL from Day 0 to Day 180. Ten cats were used on study completion.
- This drug was not studied in dogs receiving corticosteroids. Pre-treatment to 93 mg/dL, 120 mg/dL, and 119 mg/dL at the three treatment period evaluations. Cats: A total of 166 client-owned dogs were enrolled in an 835 dog study completed the 21-day field safety and effectiveness study. Total blood glucose mean nadirs were measured 3 times at 30-day intervals (Study Period). The blood glucose curve means decreased from 401 mg/dL on Day 0 to 260 mg/dL on Day 60. Thirty-nine owners (100%) said they were able to learn how to use the pen. Thirty-four owners (89%) said the pen was easy to use. Thirty-five of the 83 owners (81%) said the pen was intolerable by the cat. For 30 of the 83 owners (36%), the veterinarian said that the diabetes was not negatively affected by the use of the pen. Cats: A total of 88 client-owned cats (63 males and 25 females) all nourished with various foods were enrolled in an 835 dog study. Field effectiveness and safety study with continued use up to Day 180. Seventeen cats were removed from the study prior to the Day 7 evaluation. The remaining cats received vagus nerve rapamycin 3 times at 30-day intervals (Study Period). The blood glucose mean nadir was reduced from 354 mg/dL on Day 0 to 182 mg/dL on Day 60. The mean blood glucose nadir decreased 85 mg/dL from Day 0 to Day 180. Ten cats were used on study completion.
- In a 21-day field safety and effectiveness study, 40 dogs, already controlled on vetsulin®, were administered vetsulin® using a VetPen® insulin pen loaded with a pre-filled 2.7 mL vetsulin® cartridge and 29 gauge/12 mm pen needles. Thirty-eight of 40 dogs were evaluated after the pen was used for the first time. Of the 38 dogs (97%), the veterinarians said that the diabetes was not negatively affected by the use of the pen.
The **Pet Diabetes Tracker** is a free app that helps pet owners manage their pet’s diabetes on their smartphone or tablet. Owners can track the amount of insulin given and also set reminders for when the next dose is needed. They can even reorder insulin directly through the app to ensure they never miss a dose.

Your patients can download the Pet Diabetes Tracker from online app stores.