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**DOGS**

**Dosing protocol for dogs on lente, NPH or detemir**

*(Fleeman and Rand unpublished data; tested on 20 diabetic dogs managed for approximately 12 mths on lente)*

Starting dose is 0.5U/kg administered BID for NPH and lente (Caninsulin/Vetsulin, Schering Plough-Intervet) insulin in dogs. This protocol was tested using adjustments to insulin dose being made every 2 weeks based on the results of serial blood glucose measurement and assessment of clinical signs derived from history and physical examination. The blood glucose values were based on using a portable glucose meter designed for human use and validated for use in dogs which measured glucose concentration in whole blood (Accutrend glucose meter, Roche). NB. When using meters calibrated for canine blood (eg. Abbott AlphaTRAK) add approximately 30 mg/dL (1.7 mmol/L) to the target values listed in the protocol below eg. instead of using a nadir cut point of 145mg/dL ( 8 mmol/L) as an indicator to increase insulin dose use 175 mg/dL ( 9.7 mmol/L) when using a meter calibrated for canine use or a serum chemistry analyzer.

Increase insulin dose when the nadir (lowest) glucose concentration is >145 mg/dL (8 mmol/L ) and when the blood glucose measurements obtained at just prior to the morning and evening insulin injection are both  $\geq$ 180 mg/dL (10 mmol/L).

Do not change insulin dose when the nadir is 90-145 mg/dL (5-8 mmol/L) and when the blood glucose measurements just prior to the morning and evening insulin injection are both  $\geq$ 180 mg/dL (10 mmol/L).

Decrease insulin dose either when the nadir is <90 mg/dL (5 mmol/L) or when at least one of the blood glucose measurements at just prior to the morning and evening insulin injection is <180 mg/dL (10 mmol/L).

Once the dog is well controlled the target nadir glucose concentration can be lower eg 70 -110 mg/dL (4 – 6.1 mmol/L-)

Assessment of the dog's clinical signs determine the magnitude of the change in insulin dose. When clinical signs of uncontrolled diabetes (water drunk >70 mL/kg/d, ketonuria, or lethargy) are present, increase insulin dose by 20% rounded down to the nearest unit. When dogs showed no clinical signs during the preceding 2 weeks, insulin dose adjust adjust by 1 unit.

The protocol for serial blood glucose evaluation comprises administration of the dog's usual meal and insulin dose in the morning and 12 hours later at night and blood glucose measurement with a portable glucose meter every 2 hours for 12 hours beginning immediately prior to the morning insulin injection and meal until immediately before the next insulin injection. Results of serial blood glucose concentration testing determine whether the insulin dose should be increased, left unchanged, or decreased. Be conservative with dose increases because severe clinical hypoglycemia kills dogs.

Dogs are considered to have stable glycemic control when the following criteria are all met over 2 months: (a) fluctuation of insulin dose by 1 unit or less, (b) water drunk <70 mL/kg/d, (c) stable body weight, and (d) absence of ketonuria. The period required to achieve stabilization ranges from 5 to 10 months (median 7 months).

If duration of action of NPH or lente insulin appears to be substantially less than 12 hrs and signs of poor control persist, try PZI or detemir (Levemir – NovoNordisk). The same protocol can be used for detemir.