

### SNAP\* T<sub>4</sub> Protocol Guidelines—A Perspective from W. L. Barteaux, BS, DVM, MRCVS

When running a SNAP\* T<sub>4</sub> Test on the SNAPshot Dx\* Analyzer, you are prompted to select a protocol (Monitoring or Screening). The option you should choose depends on the species, patient's clinical signs, and medical condition. Occasionally, it may be difficult to predict which protocol to select. Most commonly this occurs in the initial treatment phase of hyperthyroid cats with methimazole and hypothyroid dogs with levothyroxine. Below are some guidelines to help you make the appropriate selection.

#### Running SNAP T<sub>4</sub> on Canine or Equine Patients

The canine/equine screening protocol provides results within the range of 0.5–3.5 µg/dl (6.4–45.0 nmol/l). Select the **Screening** protocol when:

- Hypothyroidism is suspected.
- An initial Monitoring protocol result was <2.0 µg/dl (25.7 nmol/l) and an exact number is needed.

The canine/equine monitoring protocol provides results within the range of 2.0–7.0 µg/dl (25.7–90.1 nmol/l). Select the **Monitoring** protocol when:

- Monitoring canines or equines on thyroid supplementation.
- An initial Screening protocol result was >3.5 µg/dl (45.0 nmol/l) and an exact number is needed.

#### Running SNAP T<sub>4</sub> on Feline Patients

The feline screening protocol provides results within the range of 2.0–7.0 µg/dl (25.7–90.1 nmol/l). Select the **Screening** protocol when:

- Hyperthyroidism is suspected.
- An initial Monitoring protocol result was >3.5 µg/dl (45.0 nmol/l) and an exact number is needed.

The feline monitoring protocol provides results within the range of 0.5–3.5 µg/dl (6.4–45.0 nmol/l). Select the **Monitoring** protocol when:

- Monitoring felines on thyroid medication.
- An initial Screening protocol result was <2.0 µg/dl (25.7 nmol/l) and an exact number is needed.

#### Interpreting SNAP T<sub>4</sub> Test Results

Species	Reference Interval for SNAP T <sub>4</sub> Test
Canine	1.6–5.0 µg/dl (20.6–64.4 nmol/l)
Feline	1.0–5.0 µg/dl (12.9–64.4 nmol/l)
Equine	0.9–2.8 µg/dl (11.6–36.0 nmol/l)

Occasionally, results from samples split between the SNAPshot Dx Analyzer and the reference laboratory may not agree. Usually, differences are not clinically significant and may be explained by different methodologies and different reference ranges that are uniquely established for each analyzer. Results generated by the SNAPshot Dx Analyzer that do not agree with the reference laboratory or clinical expectations can be due to improper sample preparation/handling or the selection of the wrong protocol.

Clinically, choosing the wrong protocol should not make a difference in the majority of cases. For example, a feline patient with normal renal function on methimazole with a result >3.5 µg/dl (45.0 nmol/l) should have the methimazole dose increased, as the goal of treatment should be the mid-to-low end of the normal/reference range. Conversely, dogs on medication with a result of <2.0 µg/dl (25.7 nmol/l) should have the levothyroxine dose increased, as the goal of treatment is to have a T<sub>4</sub> that falls from the mid-to-upper end of the normal/reference range.

Additionally, it is important to note the following scenarios:

- If you are running a feline screening test and get a result of <2.0 µg/dl (25.7 nmol/l), hyperthyroidism has been ruled out.
- If you are running a canine screening and get a result of >3.5 µg/dl (45.0 nmol/l), hypothyroidism has been ruled out.



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