



Feline Thyroid Tests

Many cats become hyperthyroid as they age. Thyroid levels are also affected by nutrition, disease states (particularly liver and kidney disease), medications, etc. The most comprehensive panel offered by the laboratory is the Feline Thyroid Panel, which includes T_4 , T_3 , free T_4 by equilibrium dialysis and TSH. This would be the most useful in assessing a cat with many health problems.



T_4 & T_3

The T_4 (total T_4 or thyroxine) test is a diagnostic test for hyperthyroidism. It is also useful as a screening test for hypothyroidism and for monitoring treatment with methimazole. T_4 concentrations can be affected by medications, disease states, and nutrition. T_3 (total T_3 or triiodothyronine) is the active form of thyroid hormone. T_3 levels are usually elevated or high-normal in hyperthyroid cats.

Free T_4 by equilibrium dialysis

Free T_4 (FT_4) is the non-protein bound thyroxine present in the blood. Measuring FT_4 can help determine if cats with high-normal or borderline total T_4 levels are normal or hyperthyroid. The equilibrium dialysis (ED) method is the only assay used for testing feline samples in this lab. FT_4 ED levels can be falsely elevated by mishandling specimens/samples (e.g. warming, severe hemolysis, etc.). FT_4 concentrations may also be affected by low protein states caused by kidney or liver disease, neoplasia, etc. We have determined the Free T_4 Two Step (TS) method used for dog samples is not valid for cats.

TSH baseline

TSH (Thyroid Stimulating Hormone) measurement can be used in combination with the other thyroid tests mentioned. Hyperthyroid cats will generally have low levels of TSH. Hyperthyroid cats showing clinical signs of hypothyroidism after treatment with radioactive iodine will generally have high TSH levels.

T_3 -Suppression Test for Cats

Diagnosis of feline hyperthyroidism can usually be accomplished by measuring T_3 , T_4 , and/or free T_4 in a single baseline blood sample. The T_3 -suppression test is used for diagnosing hyperthyroidism in cats that have normal T_3 , T_4 , and/or free T_4 concentrations but appear clinically hyperthyroid.

1. Draw a baseline blood sample following the collection and processing procedure below and freeze this sample.
2. Orally administer 25 μg of T_3 (e.g., Cytobin[®]) every 8 hours for 2 days; administer the seventh dose on the morning of the third day.
3. Draw another blood sample 4 hours after the last dose of Cytobin[®]. Process as before.
4. Submit the paired serum samples together, optimally shipped so they are received chilled.

Guidelines for Sample Collection and Processing:

1. Collect blood into a plain red-top collection tube.
2. Allow blood adequate time to clot prior to centrifugation to ensure sufficient yield and avoid fibrin formation.
3. After centrifugation, transfer the serum into a vial suitable for shipping or frozen storage. Frozen sample storage is recommended unless samples are being shipped the day taken.
4. Ship samples with cold packs. A frozen specimen is not necessary, but the sample should arrive chilled.

Note: Free T_4 can be falsely elevated if the sample is warmed. Heat causes dissociation of T_4 from its carrier proteins increasing free T_4 concentrations. Special care should be taken when shipping samples in the summer.