

Instructional Objectives / Learning Outcomes
DMP 775, Veterinary Clinical Pathology
Department of Diagnostic Medicine/Pathobiology
College of Veterinary Medicine, Kansas State University

Chapter 17: Thyroid function

301. If given appropriate canine values for serum tT_4 , fT_4 , TSH, TgAA concentrations, and pertinent patient information,
 - a. List or classify abnormalities using appropriate terms.
 - b. Propose appropriate ideas or conclusions (i.e., diseases, syndromes, or pathologic states) that might cause the defined abnormalities.
 - c. Based on your conclusions or ideas, explain the pathogenesis of each defined abnormality if the abnormality could be caused by the disorder.
302. When considering the analysis of serum for thyroxine concentrations,
 - a. Explain why a RIA procedure produced to measure human thyroxine concentrations is not acceptable for canine serum.
 - b. Explain why a RIA procedure may generate a $[tT_4]$ that is much greater than the true concentration.
303. Explain why an assay designed to measure human [TSH] will not provide valid results for domestic mammal samples.
304. List the two major processes that produce hyperthyroxemia.
305. Explain and recognize the pathogenesis of a hyperthyroxemia or increased $[fT_4]$ that may be found in thyroid neoplasia (benign and malignant).
306. List the major process that produces hypothyroxemia.
307. Explain and recognize the pathogenesis of hypothyroxemia or decreased $[fT_4]$ that may be found with the following.
 - a. Primary hypothyroidism (lymphocytic thyroiditis)
 - b. Secondary hypothyroidism
 - c. Non-thyroidal disease or administration of certain drugs
308. Explain or recognize the pathogenesis of an increased [TSH] that may be found in the following conditions.
 - a. Hypothyroidism
 - b. Euthyroid lymphocytic thyroiditis
309. Explain why a [TSH] in a dog with secondary hypothyroidism is WRI.
310. Sick euthyroidism is a common state in which non-thyroidal disease results in hypothyroxemia and there may be multiple mechanisms that produce the hypothyroxemia. Predict if tT_4 , fT_4 , or TSH concentrations will change if the following pathologic process is occurring.
 - a. Decreased protein binding of T_4
 - b. Inhibition of TSH secretion
 - c. Inhibition of T_4 production
311. If given appropriate canine values for serum tT_4 , fT_4 , TSH, and TgAA concentrations, recognize data that are consistent with:
 - a. Primary hypothyroidism due to thyroiditis
 - b. Primary hypothyroidism (idiopathic)
 - c. Secondary hypothyroidism
 - d. Sick euthyroidism
 - e. Thyroiditis without thyroid gland dysfunction

312. If given appropriate feline values for serum tT_4 , fT_4 , or a T_3 -suppression test and basic clinical information, recognize data that are consistent with:
- Hyperthyroidism
 - Euthyroidism
 - Hypothyroidism
313. Explain the results of the following T_3 -suppression tests.

	Analyte	Units	Cat 1	Cat 2	Cat 3	Ref. Int.
Pre- T_3 sample	tT_4	nmol/L	35	30	25	15 - 40
Post- T_3 sample	tT_4	nmol/L	5	26	24	< 20
Pre- T_3 sample	tT_3	nmol/L	1.0	2.0	1.8	0.3 – 2.3
Post- T_3 sample	tT_3	nmol/L	2.5	1.8	4.0	> 2.0

- Cat 1:
- Cat 2:
- Cat 3: