
Canine Hypothyroidism and In-Office Blood Testing

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As with other in-office blood testing, T4 levels are an important diagnostic and monitoring tool for the practicing veterinarian. We have incorporated T4 levels in many aspects of our practice. One of the most beneficial aspects of the T4 level is with wellness blood testing. Yearly blood screening in older dogs (usually older than seven years) will often lead to an early diagnosis of hypothyroidism prior to the onset of clinical signs.

In addition, a wellness blood testing program that includes regular serum chemistries should lead to a higher usage of T4 testing. Many older patients have elevated (greater than 3 times normal) alkaline phosphatase levels. Most of us first consider hyperadrenalcorticism as the primary rule-out for this finding. However, any endocrine diseases can cause an elevation in this enzyme in the form of an “endocrine liver”, as our local radiologist likes to call them. In these cases, a T4 level performed in-house is an excellent screening tool to rule-out hypothyroidism as the cause of this elevation. This test can be performed while the client waits for results. If the level is low, additional sample can be immediately obtained for further testing. If the T4 level is normal, other tests such as ACTH stimulation, urine creatinine/cortisol ratio or ultrasound can be offered to the client at that time.

If in-office T4 levels are below normal, a complete thyroid panel is

always indicated. Many cases of apparent hypothyroid disease are actually due to non-thyroidal illness (hyperadrenalcorticism for example). For accurate diagnosis of this condition, TSH, anti-thyroid (thyroglobulin, Tg) antibody, anti-T3 and T4 antibody as well as T3, Free T3 and Free T4 are all useful tests. Far too many pets are placed on life-long thyroid supplement based solely on T4 levels. However, the T4 level is an excellent screening tool.

Once a diagnosis of hypothyroidism has been made, the patients’ medication must be properly titrated. After 30 days of initial therapy, T4 levels are taken at 4-6 hours post morning pill AND 10 hours post morning pill to determine peak and trough levels of the hormone in the body. This allows determination whether once or twice a day dosing will be required, and whether medication dosing is correct. These levels are repeated monthly until the proper T4 levels are found.

In-office T4 levels are also an excellent tool for monitoring long-term therapy. With T4 levels performed in-house, immediate changes in dosing can be discussed with the client. Since thyroid supplement requirements can change throughout the dogs’ life (due to changes in weight, living conditions, etc.) regular T4 levels should be required of any patient on chronic therapy. We require a yearly T4 level for all of our patients taking thyroid supplement (although we recommend twice yearly levels) in order to refill the prescription.

