

Thyroid Testing Assays –Jean Dodd, DVM.

All our thyroid hormone assays use radioisotopic methods, except for the thyroid autoantibody measurements [T3AA and T4AA are determined by differential absorption/precipitation; TgAA is measured by ELISA].

Our freeT4 assays are of two kinds: a two-step RIA method and a dialysed [ED] RIA method. My colleagues at Michigan State and our lab at Antech Diagnostics --- the largest vet diagnostic lab in USA ---measure freeT4 by either the two-step Diasorin method or the ED . BOTH are equally valid, although all ED methods for freeT4 use the commercial kit provided by the Nicholls Institute in California. The coefficient of variation of this freeT4 ED method is stated to be 25% -- very high. FreeT4 can also be validly measured by a chemiluminescence method, as well as by a new ELISA . So, we no longer have this "magic" assumption that freeT4 has to be measured by a dialysis technique to be valid.

Canine endogenous TSH (cTSH) is poorly predictive of primary hypothyroidism in dogs (70%) versus > 95% in humans, and can give 20-40% discordant results [both false positive and false negative. This finding has been verified by several published studies. The reason is unclear, but it appears that the dog has some alternate pathway for regulating thyroid stimulation. Because of this poor predictability, we no longer routinely measure cTSH, unless specifically requested.