

Use for diagnosing canine hypothyroidism



If hypothyroidism is suspected in Dogs (details of the illness, clinical and biological signs - hypercholesterolemia), the combined assays of total T4 (tT4) AND canine TSH (TSHc) confirm or rule out the diagnosis in the majority of cases.

The negative predictive value of tT4 is very high. Therefore a very low tT4 value in the reference range is not predictive of hypothyroidism.

Nevertheless, it is recommended to systematically combine the TSHc assay in order to examine so-called 'functional' hypothyroidism (associated with some severe or chronic diseases and some prolonged treatments) or to suspect the presence of antithyroglobulin antibodies (ATA).

Lastly, the TSHc assay alone is not recommended as its secretion may be pulsatile (a risk of false positives).

Reference ranges

According to IFCC standards, the reference ranges obtained in Dogs, measured with the FDC Immuno AU10 analyser, are:

tT4	17 - 38 nmol/L
TSHc	0 - 0.5 ng/mL



FDC Immuno AU10

v-T4, vc and TSH Cartridges - Technical characteristics

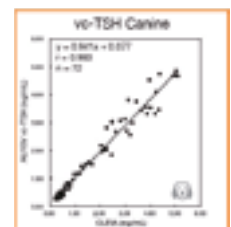
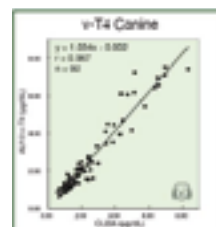
Conventionally, hormonal assays are performed on serum.

Fujifilm developed an assay technology to use heparinised plasma with an excellent correlation.

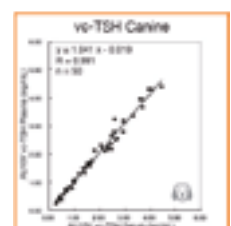
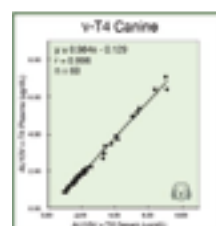
Name	v-T4 Cartridge
Analysis time	10 minutes
Sample	Plasma and Serum - 100 µl
Measuring range	6 - 103 nmol/L
Storage	4 - 8°C

Name	vc-TSH Cartridge
Analysis time	10 minutes
Sample	Plasma and Serum - 100 µl
Measuring range	0 - 5 ng/mL
Storage	4 - 8°C

FDC Immuno AU10 vs Standard Method

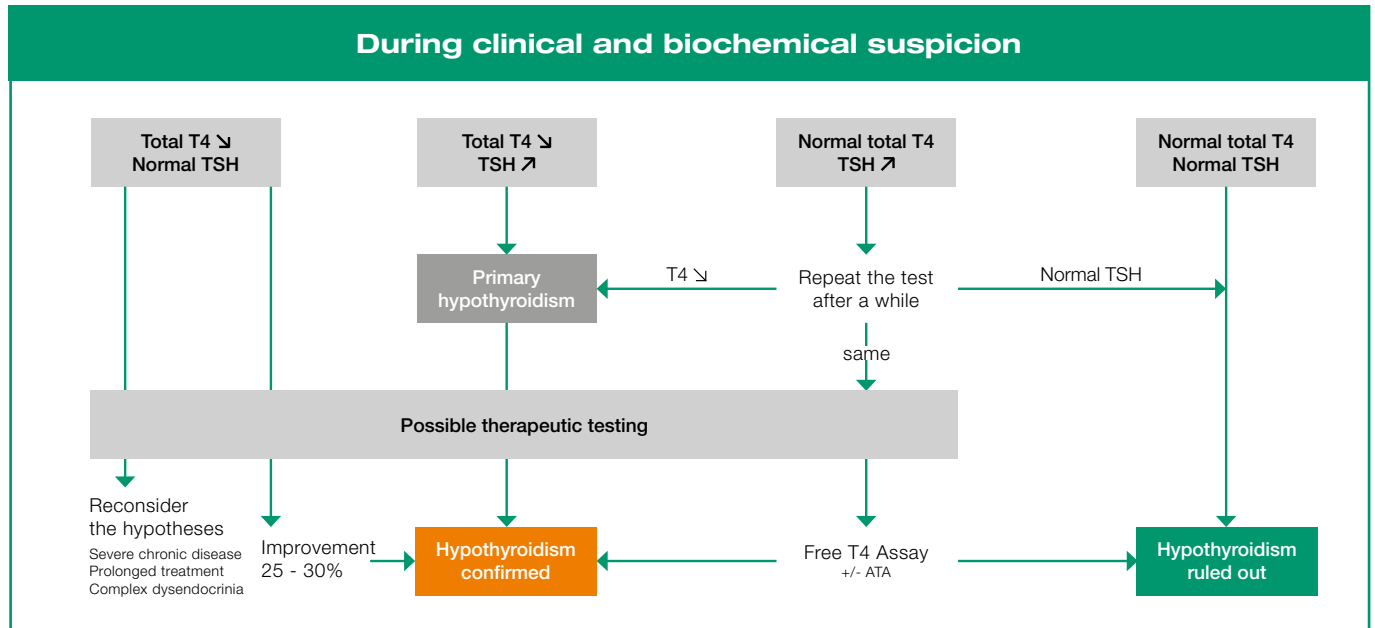


Plasma/Serum Correlation





Diagnostic approach

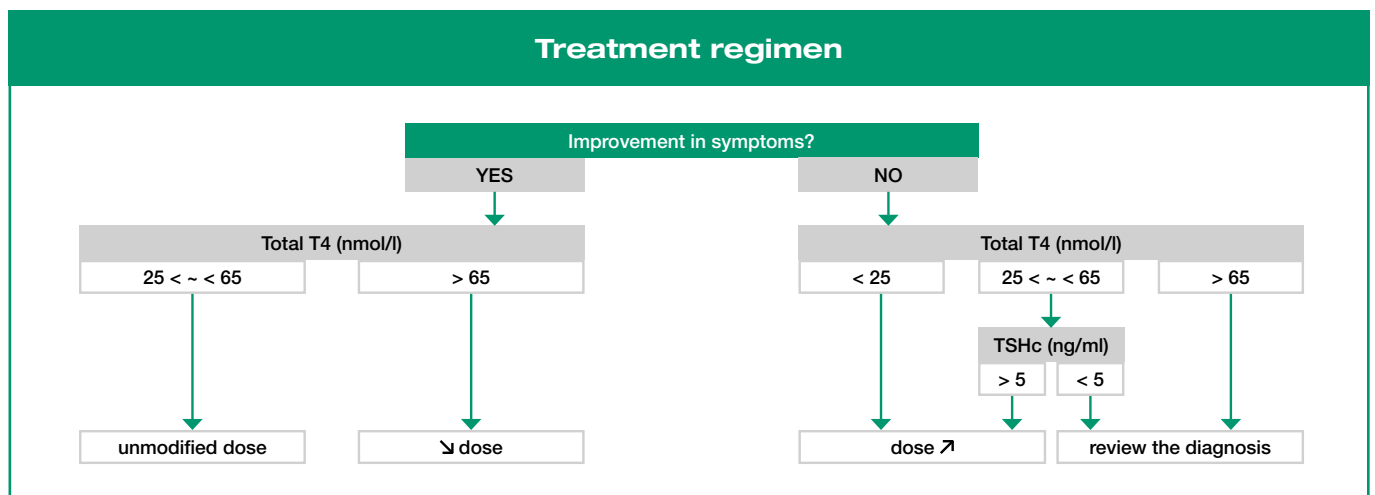


Treatment follow-up

It is recommended to administer Levothyroxine in the morning on an empty stomach. The rate of improvement is variable according to the predominant clinical form.

One or two tests might be necessary to make a diagnosis.

First clinical and blood tests 2 to 4 weeks after the start of treatment. Blood test 4 to 6 hours after taking Levothyroxine.



References: Carmel T. Mooney; Mark E. Peterson - BSAVA manual of canine and feline endocrinology - fourth edition
 Feldman EC, Nelson RW, Reusch CE, Scott-Moncrief JC, Berhend EN - Canine and feline endocrinology, 4th ed. Elsevier, St Louis 2015
 Naohito Nishii - Let's again, The diagnosis of hypothyroidism - CAP March 2016