



Patient Details

Ms Sample Report
 Genova Diagnostics Europe Ltd
 Parkgate House
 356, West Barnes Lane
 New Malden
 KT3 6NB

Practitioner Details

Genova Diagnostics (Europe)
 Parkgate House
 356 West Barnes Lane
 New Malden
 KT3 6NB

Client ID No: IWX500220
 Accession No: A010000
 Patients DOB: 06/08/1989
 Sample Date & Time: 25/09/2011
 Date Of Report: 27/09/2011 10:52

Sample Type - Serum	Result	Optimal Range	Reference Range	Units
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Central Thyroid Regulation & Activity

Total Throxine (T4)	56 L	77 - 150	58 - 154	nmol/L
Thyroid Stimulating Hormone (TSH)	4.6 H	1.0 - 2.0	0.4 - 4.0	mIU/L
Free Thyroxine (FT4)	11.2 L	12 - 20	10 - 22	pmol/L

Peripheral Thyroid Function

Free T3 (FT3)	2.90 L	3.4 - 6.0	2.8 - 6.5	pmol/L
FT4 : FT3 Ratio	3.9	2.5 - 4.0	2.0 - 4.5	Ratio
* Reverse T3 (rT3) (If Requested)	0.39	0.14 - 0.40	0.14 - 0.54	pmol/mL

[* Analysis Performed by Genova Diagnostics USA]

Thyroid Auto Immunity

Thyroglobulin (TG)	68 H	<35	0 - 40	IU/mL
Peroxidase (TPO)	<10.0	<30	0 - 35	IU/mL

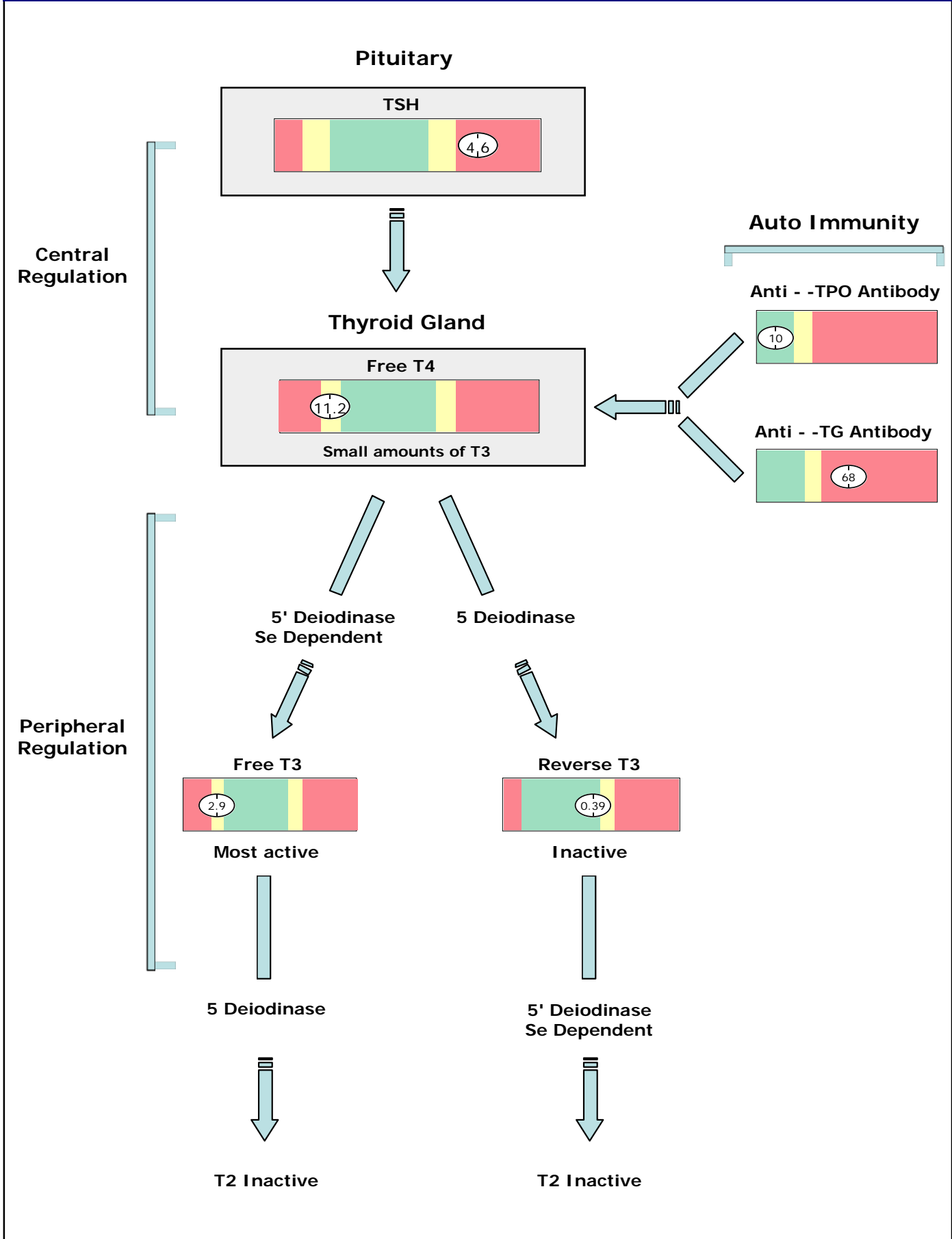
Key Guide

- Within Optimal Range
- Outside Optimal Range but within Reference Range
- Outside Reference Range

Reference range: The conventional or standard laboratory normal range designed to identify and diagnose disease states and pathology.

Optimal range: The functional approach, orientated around changes in physiology and not pathology. This results in a tighter range, increasing the ability to detect patients with changes in physiological function.

Thyroid Metabolism at a Glance



Commentary

Primary Hypothyroidism is PROBABLE. The likelihood increases if serum tryglycerides are elevated (>4.52) and the total cholesterol levels are increased (>6.22)

Some of the clinical signs of hypothyroidism include:

1. Difficulty losing weight
2. Mentally sluggish, reduced initiative
3. Easily fatigued, sleepy during the day
4. Sensitive to cold, poor circulation (cold hands and feet)
5. Chronic constipation
6. Excessive hair loss and / or coarse hair
7. Morning headaches, wear off during the day
8. Loss of lateral 1/3 of eyebrow
9. Seasonal sadness

PROBABLE auto-immune thyroid disease.

Thyroiditis is the most common thyroid condition, leading to either hypothyroidism (Hashimoto's and sub-acute thyroiditis) or hyperthyroidism (Grave's disease). Hypothyroidism due to thyroiditis is the most common. Thyroiditis can present with normal, elevated, or decreased levels of thyroid hormone at any time.

Hashimoto's and Grave's disease the levels of auto-antibodies are significantly elevated.

With sub-acute thyroiditis, the levels are usually normal or slightly increased.

Viral infection has been implicated in the etiology of sub-acute thyroiditis, including mumps virus, coxsackievirus and adenoviruses. Bacteria also implicated include: Staph aureus, Strep pneumoniae & Strep pyogenes.

CONSIDER Selenium deficiency and/or CONSIDER Wilson's Syndrome

Inactive T4 is converted into T3, the active thyroid hormone, by cleaving an iodine molecule from its structure. Selenium plays an active role in this cleaving process

Other conditions associated with decreased T3 levels include: Pregnancy, Severe liver disease, Prescribed drug or radiation therapy for hyperthyroidism

Wilson's syndrome is a condition of abnormal conversion of T4 into the more active T3 in the peripheral tissue. Significant amounts of the T4 get converted into reverse T3, an almost biologically inactive molecule, which interferes with thyroid binding at the tissue level. Not unlike Type II diabetes, Wilson's syndrome is a problem of tissue resistance as opposed to organ dysfunction. The thyroid gland in Wilson's syndrome is usually functioning normally. In many cases the thyroid hormone tests, such as TSH are normal. There is however often an associated low normal or decreased Free T3 level and an increased reverse T3 level.

Many types of stressors (i.e. starvation diets, pregnancy, environmental pollutants, emotional stress and multiple drugs) can impair the peripheral conversion of T4 to T3.

Levels of Reverse T3 appear to be within the optimal range.