

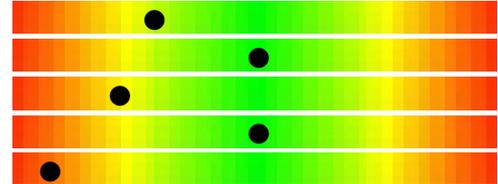
ENDOCRINOLOGY

BLOOD - SERUM

Result Range Units

THYROID FUNCTION ASSESSMENT

TSH	1.30	0.50 - 5.00	mIU/L
FREE T4	15.6	11.0 - 21.0	pmol/L
FREE T3	3.0 *L	3.1 - 6.0	pmol/L
Reverse T3	393.0	230.0 - 540.0	pmol/L
FT3 : Reverse T3 Ratio (X 100)	0.763 *L	1.200 - 2.200	


THYROID TEST COMMENTS

There are differing views regarding reference ranges of TSH. New reference ranges using populations without thyroid disease suggest that the optimal TSH range for thyroid function should be 0.5-2.0mIU/L. However it should be noted that this laboratory shall continue to report a normal reference range of 0.5 - 5.0 mIU/L.

FREE T4 and FREE T3

Free T4 and T3 represent bioactive portion of thyroid hormone. The test results can identify functional or subclinical hyper- and hypothyroidism and overt hypo- and hyperthyroidism. T4 converts to active T3 or inactive rT3.

LOW FT3 LEVEL:

A low T3 level may indicate overt hypothyroidism. Treatment is indicated.

If T3 levels are in the lower part of the reference range, whilst T4 is normal, this may indicate decreased deiodinase activity.

Treatment Considerations:

If T4 is low or low normal, treat as per protocols for low T4

If T4 is normal follow the suggestions below to enhance T4 to T3 conversion

If patient is currently on L-thyroxine, consider a thyroid medication that contains both T4 and T3.

If patient is not currently on L-thyroxine, consider T3 therapy if nutritional, hormonal and lifestyle therapies are not adequate.

Selenium, Iron, Zinc

Vitamins A, B2, B6 and B12

Tyrosine

Potassium, Copper, Chromium

Consider therapy with Withania. Assess and treat high levels of reverse T3

Assess and treat cortisol and/or estrogen excess

Consider implementing the following dietary and lifestyle factors:

Balance protein levels; decrease if excessive and increase if inadequate

Reduce excessive consumption of soy products, cruciferous vegetables, walnuts and alcohol

Reduce excessive exercise

Increase calorie intake if patient is on a calorie restrictive diet

Purify water, Fluoride may interfere with T3 production

Reverse T3 levels can increase when peripheral conversion of T4 to active T3 is impaired. Peripheral thyroid imbalances may arise from nutrient deficiencies, heavy metal exposure, adrenal stress, enzyme deficiencies, and chronic illnesses.

THYROID AUTO-Abs

THYROID PEROXIDASE Ab.	<10.0	< 35.0	IU/mL
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(*) Result outside normal reference range

(L) Result is below lower limit of reference range



Sample Test Name

Date Of Birth: 04 OCT 1972
Sex: M
Lab ID: #####

Test Physician

Dr. Edward Chan
11 - 1, Wisma Laxton,
Jalan Desa, Taman Desa, 58100.

ANTITHYROGLOBULIN Ab. <10.0 < 115 IU/mL
TSH RECEPTOR AB <1.0 0.0 - 1.5



THYROID Ab COMMENTS

THYROID ANTIBODIES COMMENTS:

Thyroglobulin Antibodies (ATG Ab)

Thyroglobulin is a large protein from which the thyroid hormones T3 and T4 are produced.

Thyroid Peroxide Antibodies (TPO Ab)

Thyroid peroxidase (TPO) is responsible for the iodination of tyrosine residues in the thyroglobulin molecule.

LOW Titres No treatment required.

HIGH Titres Interpretation:

Elevated levels of thyroid antibodies may inhibit the function of TSH or T4

Elevated thyroid antibodies may therefore lead to symptoms of either hypothyroidism or hyperthyroidism, even if levels of TSH, T4 & T3 are optimal.

Treatment Considerations:

Selenium and omega 3 supplementation

Antioxidant supplementation

A gluten free and/or dairy free diet

Nutrients that support the immune system

Assess patient for celiac disease

Assess and treat leaky gut

Assess and treat liver detoxification

Assess and treat heavy metal levels

Assess and treat food sensitivities & allergies

Supplement with low dose cortisol (Hydrocortisone) and/or DHEA daily.

Anti-Thyroid Peroxidase antibody (anti-TPO Ab, also known as anti-microsomal Ab) is elevated in autoimmune thyroid disease and post partum thyroiditis.

Anti-Tg (anti-Thyroglobulin Abs) are elevated less frequently than anti-TPO in auto-immune thyroid disease, but there are some cases which are anti-TPO negative and anti-TG positive.

Incidence of thyroid Abs	a-TPO	a-TG
Hashimoto's thyroiditis	>95%	85%
Graves' disease	>80%	30%
Post-partum thyroiditis	>80%	N/A
Normal population	<10%	10%

Tests ordered: TSHA,TFA,IMPEI,THAB,CFee