NutriPATH
Integrative Pathology Services

REVERSE T3 (serum)

Thyroid abnormalities are one of the most common endocrine disorders affecting millions worldwide. Thyroid hormones are well known for their role in basal metabolic rate, development and growth. Hypothyroidism affects approximately 4-5% of the population whilst estimates for hyperthyroidism are 0.4-2%. Thyroid function testing should be considered in all high risk populations including the ageing population, postpartum women, those with autoimmune disorders, those with a family history of autoimmune thyroid disorders and patients with previous head, neck or thyroid surgery.

Thyroid

Thyroid hormones are well known for their role in basal metabolic rate; however, they affect development and growth. The thyroid hormones interact with receptors found in the nucleus of every cell of the body and this interaction leads to the turning on and off of many genes and ultimately to the modification of many bodily functions. Therefore, it is understandable that abnormalities in the level of thyroid hormones can lead to a diverse array of symptoms involving the heart, brain, skin and reproductive systems.

Hypothyroidism

Hypothyroidism is the most common disorder with the prevalence in normal populations with optimal iodine levels being approximately 4-5%. It is most common in women and increases with age. In populations greater than 75 years of age, estimates are as high as 18.5%. There are also special populations with a higher risk of developing hypothyroidism including postpartum women, individuals with a family history of autoimmune thyroid disorders, patients with previous head and neck or thyroid surgery, other autoimmune disorders (type I diabetes, adrenal insufficiency, celiac disease, vitiligo, pernicious anaemia), as well as Down's and Turner's syndromes. The symptoms for hypothyroidism include the well-known characteristics such as fatigue, cold extremities, weight gain and poor memory. In addition, hypothyroidism is also associated with many conditions such as hypertension, cardiovascular disease, menstrual disorders, infertility, rhinitis and urticaria.

Hyperthyroidism and Autoimmune Disease of the Thyroid Gland

Hyperthyroidism is a much less common disorder with estimates being 0.4-2%. Symptoms for hyperthyroidism include tachycardia, anxiety, weight loss and heat sensitivity. The most common causes include Graves' disease, toxic adenoma, toxic multinodular goitre and painless postpartum lymphocytic thyroiditis (PPLT). Both Graves' disease and PPLT are caused by autoimmune thyroiditis. Autoimmune disease of the thyroid can cause both hypo and hyperthyroidism, as the antibodies can either block or stimulate the thyroid receptors. Estimates for the presence of thyroid antibodies in the general population are 12.4%.

SYMPTOMS AND CONDITIONS ASSOCIATED WITH THYROID DYSFUNCTION	
Hypothyroidism	**Hyperthyroidism**
Fatigue, Poor concentration	Fatigue, Poor concentration
Weight gain	Weight loss
Cold intolerance	Heat intolerance
Skin and hair dryness, hair loss	Increased sweating
Constipation	Frequent bowel movement
Depression	Anxiety and restlessness
Apathy	Irritability
Memory impairment	Insomnia
Muscle cramps and myalgia	Muscle weakness
Oedema	Dyspnea
Bradycardia, dyslipidemia	Palpitations, hypertension
Irregular/heavy menstrual periods	Irregular menstrual periods
Depressed ovarian function, infertility	Depressed ovarian function

Reverse T3

Reverse T3 (RT3) 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.

Reverse T3 acts as a storage protein for three molecules of iodine within tissues and the circulation. T3 and RT3 are de-iodinated to T2, releasing one of its iodine molecules. These iodine molecules are then utilised by a variety of tissues including breast, prostate, ovaries, salivary glands, CNS, stomach, kidneys and placenta.

REVERSE T3 (serum) [Test Code: 1112]

- Reverse T3

Other thyroid tests available

- **Thyroid Profile - Basic (serum):** TSH, free T4, free T3
- **Thyroid Profile - Extensive (serum):** TSH, free T4, free T3; reverse T3, ratios, TPO Ab, ATG Ab, TSH Receptor Abs
- **Thyroid Hormone Profile - Basic (urine):** T4, T3, T4/T3 ratios
- **Thyroid Hormone Profile – Extensive (urine)**: T4, T3, T4/T3 ratios, Tyrosine, iodine, Selenium
- **Iodine – Random (urine):** Iodine (random)
- **Iodine – Loading (urine):** Iodine (random), Iodine (post loading), Iodine excretion %

How to order a test kit:

To order a test kit simply request the test name and/or test code on a NutriPATH request form and have the patient phone NutriPATH Customer Service on 1300 688 522.

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Phone **1300 688 522** for further details
www.nutripath.com.au