

Abnormal functioning of the thyroid gland can be established with some 95% accuracy and at no cost with the **Dr. Broda O. Barnes MD PhD Basal Body Temperature Test**.

The thyroid gland secretes hormones which control the body's metabolic rate in two primary ways: 1) by stimulating tissue response in the body to produce proteins and 2) by increasing cell oxygenation. The latter increases the oxidative phosphorylation rate in tissues which results in an increase of metabolic heat. The parathyroid glands are adjacent to the thyroid. Parathyroid hormone (PTH) causes an increase in Calcium resorption from bone i.e. high levels of PTH can result in bone disorders. The thyroid produces calcitonin which increases Calcium adsorption into bone. When balanced, PTH and calcitonin regulate Calcium levels in bone and in circulation.

The regulation of thyroid hormone levels is controlled by several mechanisms. The hypothalamus, located in the brain just above the pituitary gland, secretes thyrotropin-releasing hormone (TRH), which triggers the pituitary to release thyroid-stimulating hormone (TSH). Thyroid hormones also stimulate the secretion of growth hormone from the anterior pituitary, thus hypothyroidism is associated with growth impairments. When the amount of thyroid hormone in the blood reaches a certain level, the pituitary will produce less thyroid-stimulating hormone (TSH); conversely, when the amount of thyroid hormone in the blood decreases to a certain level, the pituitary produces more thyroid-stimulating hormone. There are two forms of thyroid hormone. Thyroxine (T4), produced in the thyroid, has only a slight impact on speeding up the body's metabolic rate. Thyroxine is converted by the liver and other organs to triiodothyronine (T3), which is the metabolically active form. Most of the T4 and T3 remains tightly bound to certain proteins in the blood in an inactive form. The body's continually changing need for more or less thyroid hormone will determine the rate of T4 to T3 conversion and the release of bound T3 and T4 in blood protein. In this way, the body will maintain the proper levels of thyroid hormone to regulate normal metabolic rate.

Hypothyroidism means that the thyroid gland is producing too little thyroid hormone. The symptoms of hypothyroidism are gradual and are sometimes mistaken for depression. Facial expressions become dull, the voice becomes hoarse, eyelids droop, and the face and eyes become puffy and swollen. Thyroid deficiency generally affects women who are over the age of 40, but it can also affect men and teenagers, especially if it runs in the family. Hypothyroidism can cause a number of other conditions, such as allergies, skin problems, fatigue, nervousness, gaining or losing weight, brittle nails, dry skin, gastrointestinal problems (constipation), infertility, mental sluggishness, low immune function, depression, and intolerance to cold. Carpal tunnel syndrome has also been associated with thyroid deficiency.

Hashimoto's thyroiditis is the most common form of hypothyroidism presenting with an enlarged thyroid gland that becomes nonfunctional, with the active parts of the gland deteriorating after several years (glandular hypertrophy is due to increased function until finally the gland is exhausted). Treatment for hyperthyroidism, which includes administering radioactive iodine and surgical removal, may also result in hypothyroidism. In many undeveloped countries where there is a chronic lack of iodine in the diet, goitrous hypothyroidism resulting from an underactive thyroid gland is common. Hypothyroidism resulting from a lack of dietary iodine is rare in developed countries. Severe hypothyroidism is known as myxoedema.

One aspect often overlooked is the influence of oxidative stress (excess free radicals) on hormones including thyroid hormones. Oxidative stress can degrade ordinary T3 into reverse T3 (rT3) which has quite the opposite effect to T3. In a similar vein endocrine disruptors like heavy metals can affect the function of the pituitary and the hypothalamus glands which in turn, as you have read above, affect the function of the thyroid gland. In the 3-5 days leading up to a full Biological Terrain Analysis, you use the Dr. Barnes test to get priceless information about the functioning of your thyroid gland. Abnormal findings may be followed up by standard lab tests like TSH, T3, free T3 and T4.

The Dr. Broda O. Barnes MD PhD Basal Body Temperature Test procedure is as follows:

Shake down an oral glass thermometer and leave it on the night table before going to bed
Upon awakening, with as little movement as possible, place the thermometer firmly in your armpit or under your tongue (menstruating women should do this test only on the second and third days of their menstrual flow)

Keep the thermometer there for 10 minutes

Record the readings on three - five consecutive days

A normal functioning thyroid should have a reading of 36.6 - 36.8 °C (97.8 to 98.2 °F)

A reading of 36.6 (97.8) or lower, according to Dr. Barnes, may indicate low thyroid function



If the Basal Body Temperature Tests is abnormal I may examine the thyroid. The standard procedure is as follows: identify the cricoid cartilage with the fingers of both hands, move downward two or three tracheal rings while palpating for the isthmus, move laterally from the midline while palpating for the lobes of the thyroid. Note the size, symmetry and position of the lobes, as well as the presence of any nodules. A normal thyroid gland is often not palpable.

What can be done about this from a naturopathic perspective? Contextual supplementation along with natural glandular concentrates may help return the TSH to the normal range. Armour Desiccated Thyroid Hormone is a natural glandular concentrate and is derived from porcine thyroid gland. It contains T4 and T3 that most closely resemble natural human thyroid hormone. Nutritional supplementation can include vitamin A, B-complex, B12, antioxidants vitamin C, E and Coenzyme Q10 plus Magnesium, Manganese, Selenium, Zinc. Iodine at 1mg/day (kelp) and especially the amino acid tyrosine (500-1000mg/day) are necessary to make T4 in the thyroid gland.