

New formula for Thyroid Health

INDICATIONS:

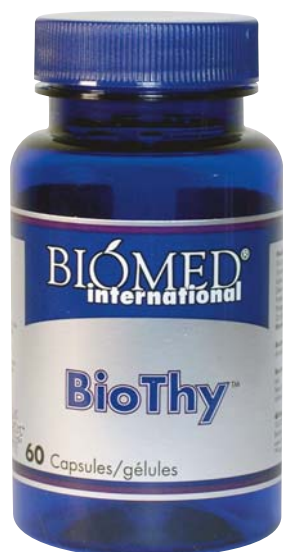
- Thyroid Dysfunction
- Any condition related to thyroid dysfunction

BioThy™ is a well-balanced formulation for thyroid support. The combination of an amino acid (L-tyrosine), trace minerals (iodine, selenium and zinc) and protein and glandulars in **BioThy™** are highly suitable for treating conditions related to thyroid dysfunction, including chronic fatigue, depression, menstrual dysfunction, recurrent infections, difficulty losing weight, cold sensitivity, and osteoporosis.

The thyroid plays an important role, directly or indirectly, in various functions in the body. Thyroid glands produce two major hormones, triiodothyronine (T3) and thyroxine (T4). Thyroxine represents about 93% of the hormone produced by the thyroid with the balance (7%) being triiodothyronine. The release of T3 and T4 is controlled by the hypothalamus, which stimulates the secretion of thyroid-stimulating hormone (TSH) from the anterior pituitary. T3 and T4 control the metabolic rate of the body, the rate of protein synthesis and the rate of energy release from carbohydrates. They also regulate the rate of growth in the young and are associated with sexual maturity and early maturation of the nervous system. T3 is the primary thyroid hormone the body utilizes. Under healthy conditions the body is able to convert all T4 to T3. T4 is comprised of two tyrosine molecules connected to two iodine constituents. T3 is created when the liver enzyme 5-monodeiodinase causes a simple iodine molecule to be removed from the outer tyrosine.

Another minor hormone produced by the thyroid is, calcitonin. It is responsible for regulating calcium levels in the blood by inhibiting the rate at which calcium leaves bone tissues.

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Each capsule contains: Ingredients

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L-tyrosine	200 mg	Thyroid hormone precursor and neurotransmitter of dopamine, norepinephrine and epinephrine.
Iodine (kelp)	100 µg	Basic substance of the thyroid gland used to produce thyroxine.
Selenium (Selenomethionine)	100 µg	Antioxidant; normalizes TSH levels and T4 and T3 conversion
Protein hydrolysate	150 mg	Increases plasma thyroxine concentration
Pituitary (anterior)	10 mg	Nourishing of the anterior pituitary which secretes thyroid stimulating hormone (TSH)
Zinc (citrate)	10 mg	Required for T4 to T3 conversion; immune system stimulant

Non-medical ingredients: microcrystalline cellulose

Contraindications: Do not take during pregnancy or lactation. Do not use in individuals with known or suspected sensitivity to any of the above listed ingredients.

Side effects & interactions: Avoid this product if you take monoamine oxidase or MAO inhibitors.

ADULT DOSAGE: Take one capsule twice a day or as directed by a practitioner.

BIOTHY™

Iodine

Iodine from kelp is required by the thyroid gland. Sixty percent of the body's iodine intake is stored in the thyroid gland and used to make thyroxine, which, in turn, regulates metabolism, energy levels and the burning of fat. A 2001 study indicates a correlation between low urinary iodine excretions and enlarged thyroid and/or elevated thyroglobulin levels.¹ The only function iodine serves in the body is thyroid hormone production. Yet, the intake of too much iodine can actually impair this function. Consequently it is not recommended that iodine consumption exceed 600 mg per day.

Selenium

Selenium is a constituent of the enzyme 1 iodothyronine deiodinase (ID1), an enzyme responsible for the peripheral conversion of T4 to T3 in the liver and kidneys. This enzyme is markedly reduced in selenium deficiency. Due to its association with the conversion of T4 to active T3, selenium deficiency can contribute to hypothyroidism.² Various studies have pointed out that selenium supplementation is beneficial in normalizing TSH levels and improving the conversion of T4 to active T3. One study on children with congenital hypothyroidism showed that supplementation with using 20-60mg/day of selenium caused a 74% increase in plasma selenium, normalized the levels of TSH and improved the conversion of T4 to active T3.³ Other studies have yielded similar results.⁴

Zinc

Zinc is important for healthy thyroid function as it plays a role in stimulating the secretion of TSH. Zinc deficiency can affect the metabolism of thyroid hormones leading to hypothyroidism. A study designed to evaluate zinc metabolism in adults of both sexes with thyroid disease

observed that abnormal zinc metabolism occurs commonly in patients with thyroid disease.⁵ An animal study revealed that zinc deficiency reduced the concentration of T3 and T4 in serum by approx. 30% and the enzyme ID1 by 67% in comparison to zinc-balanced conditions.⁶

L-tyrosine

As indicated above, L-tyrosine is a direct precursor to thyroxine and is a necessary amino acid in the production of neurotransmitters including epinephrine, norepinephrine, and dopamine. L-tyrosine has been found to assist in optimizing thyroid hormone levels and in increasing concentration and productivity. Supplementation with L-tyrosine can assist a sluggish thyroid and play a role in achieving weight loss.

Protein hydrolysate and pituitary

Protein hydrolysate (from bovine) assists to balance plasma thyroxine concentrations, which increase the metabolic rate and lowers the plasma cholesterol concentration.^{7,8}

The pituitary gland through its release of TSH plays an important role in regulating thyroid function. Increasing the production of TSH when more thyroid hormones are required and suppressing it when too much hormone is present. Glandular pituitary supplementation has been shown to assist in thyroid function.

References:

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4. Olivieri O, et al. Low selenium status in the elderly influences thyroid hormones. *Clin Sci (Lond).* 1995 Dec; 89(6):637-42.
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