

Iodine Synergy™

Supports Thyroid Function*



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This information is provided as a medical and scientific educational resource for the use of physicians and other licensed health-care practitioners ("Practitioners"). This information is intended for Practitioners to use as a basis for determining whether to recommend these products to their patients. All recommendations regarding protocols, dosing, prescribing, and/or usage instructions should be tailored to the individual needs of the patient considering their medical history and concomitant therapies. This information is not intended for use by consumers.

Iodine Synergy™ contains potassium iodide to support normal thyroid function, including balanced production of the thyroid hormones thyroxine (T4) and triiodothyronine (T3).^{*} Potassium iodide is a weak salt and easily splits apart in the gut, leaving free iodide ions to join together forming iodine. The selenium in this product works synergistically with iodine to support the normal conversion of the inactive T4 to the active thyroid hormone T3 and it supports antioxidant status.^{*}

Ingredient Highlights

- 10,000 mcg of iodine (as potassium iodide) per serving to support thyroid hormone synthesis and thyroid function^{*}
- 40 mcg of selenium (as selenomethionine) per serving to support antioxidant status and normal conversion of T4 to T3^{*}

Iodine (as potassium iodide) is essential for thyroid hormone production, as iodine atoms are part of the molecular structure.¹⁻³ It is estimated that there is 15 mg to 20 mg of iodine in a healthy adult's body, with between 70% and 80% found in the thyroid gland.² Four molecules are necessary for the biosynthesis of thyroid hormone: iodide, tyrosine, thyroglobulin, hydrogen peroxide (H₂O₂), and thyroid peroxidase (TPO).³ Upon absorption, iodine binds to tyrosine to form iodothyronines in thyroglobulin.² Thyroglobulin acts as the foundation for thyroid hormones, with iodotyrosine residues binding to form T3 or T4.^{2,3} Thyroid hormones regulate key aspects of biological function, including metabolism and normal growth and development.⁴ Thyroid hormone status is associated with energy expenditure and body weight.⁴ Thyroid hormones regulate cholesterol synthesis, bile acid synthesis, fatty acid metabolism, and glucose homeostasis.⁴

There is a U-shaped curve regarding iodine status, with iodine deficiency and iodine excess both potentially contributing to thyroid dysfunction.⁵ Some adaptation can occur to make up for iodine insufficiency and deficiency, but when iodine stores become depleted, dysfunction and goiter can occur.² The RDA for iodine is 150 mcg per day for adult men and women, whereas those who are pregnant and/or lactating, the RDA is 220 mcg per day and 290 mcg per day, respectively.⁶ The RDA was established as the minimum value that supports optimal thyroid function, thus reducing the risk of goiter. Average iodine intake was reported in the US as 216 mcg per day (range, 141 mcg to 296 mcg per day).⁷ Habitual iodine intake in Japan was estimated to be significantly higher at 1.48 mg (range, 1 mg to 3 mg).⁸ Seafood and fortified foods are the most significant contributors to total iodine intake.

Studies have revealed many roles of iodine in human physiology besides those related to thyroid function, such as supporting antioxidant status and immune function.^{9,10} Dr. David Brownstein and Dr. Guy E. Abraham are clinicians and researchers who have implemented iodine supplementation with doses in the range of 6.5 mg to 50 mg per day since 2006 to support thyroid function and overall health.¹¹⁻¹⁵ They claim that high doses of iodine are useful in compensating for high intake of goitrogens or other contaminants, such as fluoride, bromine, and perchlorate that compete with iodine uptake by tissues. Health-care practitioners are encouraged to review the current literature advocating iodine supplementation greater than the RDA levels,^{9,11-15} along with discussions by Dr. Alan Gaby in the Townsend Letter¹⁶⁻¹⁸ and a review by Jack Kessler¹⁹ to help make clinical decisions based on their judgement and the context of the clinical situation.

Selenium (as selenomethionine) is an essential trace mineral that supports antioxidant status and thyroid function.^{*2,20} The highest concentration of selenium per gram of tissue in the body is the thyroid gland.²¹ Selenium is an important part of selenoproteins, which have many roles in the body. Iodothyronine deiodinases (DOIs) are vital selenoproteins required for proper thyroid function.^{2,20} These selenoproteins are involved in the conversion of T4 to the metabolically active T3.^{2,20} Selenium deficiency may reduce iodine metabolism and thyroid hormone synthesis.²⁰ The selenoprotein glutathione peroxidase 3 (GPX3) is a regulator of thyroid hormone synthesis by modulating the amount of hydrogen peroxide available, which is necessary for iodination reactions.²¹ GPX3 also helps protect against the oxidative stress these reactions create.²¹ Selenium and selenoproteins are also involved in many antioxidant enzymes and other elements of the body's antioxidant defense.²¹ Excess oxidative stress may impact thyroid function, and selenium may help protect against this damage.^{2,20} In a study on individuals with euthyroid function, selenium supplementation (100 ug, 200 ug, or 300 ug per day) for 5 years led to a dose-dependent decrease in serum thyroid-stimulating hormone (TSH) and free thyroxine (FT4) up to 6 months, demonstrating a potential benefit of restoring selenium status.²²

Benefits*

- Supports thyroid function
- Supports thyroid hormone synthesis
- Supports normal conversion of T4 to T3
- Supports antioxidant status

Supplement Facts

Serving Size 1 capsule

Amount Per Serving		% Daily Value
Iodine (as Potassium Iodide)	10,000 mcg	6667%
Selenium (as Selenomethionine)	40 mcg	73%

Other Ingredients: Microcrystalline cellulose, cellulose (capsule).

Selenium also supports immune function.*²⁰ Studies have demonstrated the potential for selenium supplementation to benefit autoimmune diseases of the thyroid, including decreasing anti-thyroid antigen antibodies.²⁰ This may be due to the role of selenium in supporting redox balance.²³ In a study on patients with Hashimoto's thyroiditis, 200 ug per day of selenium yeast for 6 months led to a reduction of TPO and thyroglobulin antibodies.²⁴

In a randomized controlled, prospective trial of patients with autoimmune thyroiditis and subclinical hypothyroidism (TSH < 10 mU/L), participants were given 83 ug selenomethionine per day for 4 months, which led to a 31.3% restoration of euthyroidism in the treatment group compared to 3.1% in the control group.²⁵ One systematic review and meta-analysis found that selenium supplementation (doses ranging from 80 ug per day to 200 ug per day) in adults with autoimmune thyroiditis led to a reduction in serum TPO antibodies after 3, 6, and 12 months in those treated with levothyroxine, and after 3 months in the untreated population.²⁶ Another systematic review and meta-analysis found that selenium supplementation led to a significant reduction of free triiodothyronine (FT3), FT4, and TPO antibody levels in patients with autoimmune thyroiditis.²⁷

A balance between selenium and iodine is required, with excess selenium potentially exacerbating iodine deficiency. A systematic review found that selenium status had a positive association with iodine status.² Co-existing selenium and iodine deficiency may affect the efficacy of iodine supplementation alone.²

Recommended Use: Take 1 capsule per day or as directed by your health-care practitioner.

Warning: Do not exceed the recommended dose and do not use long term without medical supervision. This product is not recommended for pregnant or lactating women.

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/api/library-assets/literature-reference---iodine-synergy-tech-sheet-references>

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Healthcare practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage.

***These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**

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