

# Thyrotonin



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DIETARY SUPPLEMENT **30** CAPSULES

## **Benefits**

The ingredients in Thyrotonin have been clinically proven to:

- Decrease sleep onset
- Improve sleep duration
- Improve symptoms associated with jet lag

#### How to Use

Take one (1) capsule at bedtime away from food. Use Thyrotonin in conjunction with medical treatment for acute or chronic dyssomnia.

# Thyroid Disease and Dyssomnias

Dyssomnias include forms of nighttime insomnia, daytime sleepiness, and exaggerated sleep requirements. Both hypothyroidism and hyperthyroidism can increase the likelihood of dyssomnias.<sup>1</sup>

The thyroid gland itself is a source of melatonin.<sup>2</sup> Studies have shown that endogenous melatonin may play immunoregulatory roles that prevent autoimmune diseases such as Hashimoto's Thyroiditis. <sup>3</sup>

Among those with thyroid disease dyssomnias contribute to symptoms including fatigue, brain fog, weight gain, increased appetite<sup>4</sup>, chronic pain<sup>5</sup>, and irritable bowel symptoms.<sup>6</sup>





# **Melatonin Supplementation**

Melatonin is the pituitary hormone largely responsible for the daily sleep wake cycle. When taken orally, melatonin increases serum melatonin levels similar to the body's own increase at nighttime.

Invivo studies have shown melatonin supplementation to have paradoxical effects on thyroid disease. In physiologic amounts it may be protective, but in pharmacologic doses it may worsen autoimmune reactions.<sup>7</sup>

Melatonin exerts its effects when it is absorbed by MT1 and MT2 receptors in the brain. When levels of melatonin in the blood are higher than physiologically normal, this receptor activity diminishes giving melatonin a biphasic response. Hence the results of high dose melatonin may be lower than the results of low dose melatonin. In fact, high dose melatonin can even diminish the response to the body's own melatonin.<sup>8</sup>

This inhibitory effect is more pronounced on adults over 40. In fact, older adults may show the strongest response to melatonin doses in the range of 100 - 200 mcg.<sup>9</sup> Yet most commercial melatonin products range in potency from 1-5 mg.

## Sustained or Immediate Release

Many popular melatonin products use binding agents to achieve a sustained release effect. The rationale is that doing so will mimic the body's secretion of melatonin throughout the course of the evening.

Yet pharmacokinetic studies have shown that immediate release and sustained release melatonin yield the same response over the course of the evening. Sustained release has the disadvantage of staying in the bloodstream in the daytime, possibly contributing to fatigue symptoms.<sup>10</sup>

# **TSF Ingredient Selection**

In constructing Thyroid Specific Formulations, all ingredients considered must share the following properties.

# Thyroid Safety

All considered ingredients must be natural compounds that have been safely consumed by humans for centuries. They must be generally recognized as safe (GRAS) by toxicologists. Finally, they must not contain unsafe levels of iodine.

# **Evidence and Efficacy**

All considered ingredients must have high-quality evidence proving their efficacy. The best quality evidence is that which demonstrates significant positive outcomes on human subjects in multiple double-blinded controlled studies. These human subjects and the outcomes should be clinically relevant to the product's end-users.

# Ingredients

Following is a complete discussion of the active ingredients. It includes their relevance to thyroid disease, mechanisms of action, and a review of supportive research.

#### Microdose Melatonin

In a clinical study, melatonin or placebo was given at nighttime to a group of perimenopausal and postmenopausal women for six months.

Those taking low dose melatonin showed significant improvements in thyroid function. Both T4 and T3 levels improved by elevating from their baseline readings.<sup>11</sup>

In other studies, high dose melatonin showed no such beneficial effects on thyroid function. <sup>12</sup>

The women taking melatonin in the above study also showed an improvement in the secretion of gonadal hormones including estradiol and testosterone.







Melatonin supplementation moved women toward hormonal equilibrium even when they started out differently. The perimenopausal women ages 43-49 saw a beneficial lowering of LH and no changes to FSH. The postmenopausal women ages 50-62 saw a beneficial lowering of FSH.

Participants noted a corresponding decrease of depression and menopausal symptoms.

#### Dosage

1-3 capsules at bedtime away from food

#### Does not Contain

- Caffeine
- Stimulants
- Thyroid hormones
- Iodine
- GMO
- Gluten
- Dairy

# **Supplement Facts**

Serving Size 1 Capsule Servings Per Container 30

| Amount Per Serving |        | %DV |
|--------------------|--------|-----|
| Melatonin          | 100mcg | +   |
|                    |        |     |

† Daily Value not established.

++ Daily Values based on a 2,000 calorie diet.

Other Ingredients: Rice Flour, Gelatin (Capsule), Microcrystalline Cellulose

# Cautions

#### Timing

TSF Supplements must be taken at least an hour after thyroid replacement medication.





#### **Dosage Modification**

Those taking TSF supplements while on replacement medication thyroid (hypothyroidism, Hashimoto's) or thyroid suppression therapy (Graves' Disease) are advised to monitor thyroid levels closely. When thyroid antibodies reduce, some need decreases other adjustments or made to their medication.

#### **Medication Interactions**

Interactions can occur with many nutraceutical ingredients and prescription medications. If you are on prescription medication, please check with your doctor or pharmacist for specific guidance.

#### References

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#### Allergy Warning

TSF products are contraindicated in individuals with a history of hypersensitivity to any of its ingredients.

#### **Pregnancy Warning**

If pregnant, nursing, an organ transplant recipient, or have multiple sclerosis, do not use TSF Products unless on the advice of and under the direct supervision of a health professional.

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