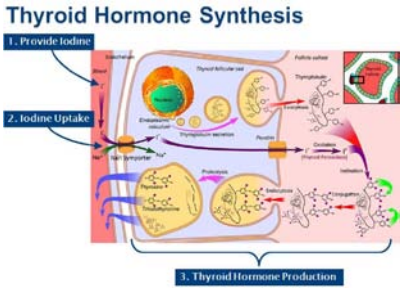
ThyroMend™ Professional Guide

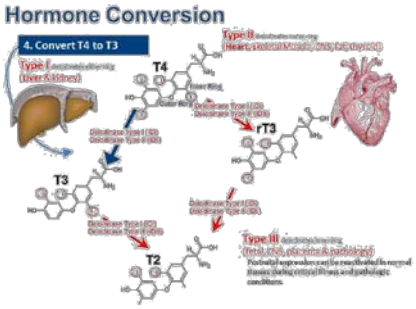
ThyroMend™ is a synergistic combination of iodine containing seaweeds, and herbs which contain phytothyroidogenic, phyto-thyroid-receptor agonists, and other herbs designed to promote optimal function of thyroid hormones by maintaining the health of the thyroid gland and supporting the healthy function of tissues that respond to thyroid hormones.

This unique combination of seaweeds and herbs synergistically supports the **SEVEN KEY FUNCTIONS** associated with **OPTIMAL THYROID HEALTH**, due to its ability to:

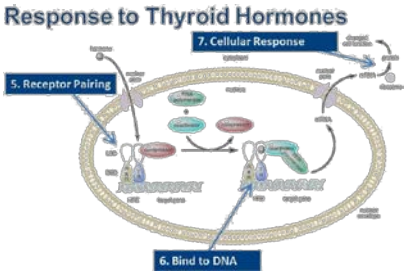
1. increase bio-available iodine for thyrocytes
2. increase iodine uptake by thyrocytes by their sodium-iodide-symporter (NIS) proteins
3. increase T3 & T4 production and secretion from thyrocytes
4. increase conversion of thyroxine (T4) to the more bioactive triiodothyronine (T3) by liver cells;
5. increase RXR/TR heterodimerization of thyroid receptors on target cells throughout the body
6. increase binding of thyroid hormone receptors to DNA by RXR/TR heterodimers throughout the body
7. increase the affect of T3 on target gene expression within receptor cells throughout the body.



Thyroid Hormone Synthesis involves the first three functions associated with optimal thyroid health. First, bioavailable iodine is presented to the thyrocytes (thyroid cells). Sea vegetables such as sea kelp and bladderwrack are the best sources of organic iodine.
Secondly, the iodine has to be taken up by the thyrocytes. This requires proper function of sodium-iodide-symporter proteins.
Third, thyroid hormone production involves a series of steps including the production of thyroglobulin (TG), the attachment of iodine to the TG protein, and the production and secretion of thyroid hormones. Most of the thyroid hormone produced by the thyroid gland is thyroxine (T4).



Hormone Conversion involves the fourth function associated with optimal thyroid health, the conversion of thyroxine (T4) to the more bioactive triiodothyronine (T3) by liver cells. This is an important step for a number of reasons. First, 80 to 95 % of the thyroid hormone released by the thyroid gland is T4. This is significant because T3 is four times more potent than T4, and more metabolically beneficial. If T4 is not converted to T3 by the liver, more of it may be converted to reverse T3 by other tissues such as the heart, skeletal muscles and the nervous system. Reverse T3 has no metabolic activity, and is best considered the “brake” while T3 is considered the “accelerator”.



Response to Thyroid Hormones involves the fifth, sixth and seventh functions associated with optimal thyroid health. The fifth function involves the pairing of two different protein receptors (RXR & TR) to create RXR/TR heterodimers, which make up the thyroid hormone receptors on cells throughout the body. Poor function of thyroid hormone receptors results in thyroid hormone resistance, in which the hormone cannot direct the actions of the cell. The sixth function is the binding of thyroid hormone receptors with T3 to DNA of the cells throughout the body. The final step is the cellular response to T3 due to gene expression within receptor cells throughout the body.

Collectively, these seven functions commence with the production of thyroid hormones and conclude with each cell throughout the body responding to thyroid hormones.

How is ThyroMend™ used?

ThyroMend™ is used by healthcare professionals to increase naturally production of thyroid hormones by the thyroid gland, increase conversion of T4 to the more active T3 hormone, and increase the ability of cells to respond to thyroid hormones. ThyroMend™ improves patients with many conditions including:

- **Patients who do not need thyroid replacement therapy, but still have low thyroid symptoms.** Symptoms may be present with “normal” hormone levels if the levels are below the 30th percentile of the reference range. This “subclinical hypothyroidism” can be improved with ThyroMend™ which can increase thyroid hormone production and thyroid hormone function.
- **Patients who are on thyroid medication but still have symptoms.** When symptoms persist even when thyroid replacement results in “normal” lab values it can be due to thyroid hormone resistance (poor thyroid receptor function). ThyroMend™ improves thyroid receptor function and eliminates symptoms of thyroid hormone resistance.
- **Patients who want to wean off of thyroid replacement therapy.** Using ThyroMend™ a month before weaning off of thyroid replacement can make weaning successful in patients if their thyroid has not been removed, or destroyed by autoimmune disease.

The Herbs of ThyroMend™

Norwegian Sea Kelp (Ascophyllum nodosum) is a dietary source of bio-available iodine. Ascophyllum nodosum is also able to increase the activity of glutathione peroxidase, an important antioxidant. Human thyrocytes synthesize and secrete extracellular glutathione peroxidase, which translocates into the intracellular space and prevents peroxidative damage of thyrocytes from diffusion of extracellular hydrogen peroxide (H202) during stimulation of thyroid-hormone synthesis.*

Bladderwrack (Fucus vesiculosus), another dietary source of natural bio-available iodine, used by many societies throughout history, also has demonstrated anti-estrogen properties in both human and animal studies, suggesting that it may contribute protective health to estrogen sensitive tissue such as the thyroid gland.*

Guggulsterone (Commiphora mukul) supports thyroid function through increased conversion of T4 to T3 in the liver, the principle site of T3 generation. Guggulsterone can also activate multiple receptors on the nuclear membrane, including thyroid receptors (alpha & beta), retinoic acid receptors, (which pairs with thyroid receptors), and the vitamin D receptor, which all play a role in thyroid function. Guggulsterone also supports healthy cholesterol levels and decreases LDL oxidation; a critical concern for those with sub-optimal thyroid function.*

Rosemary (Rosmarinus officinalis) provides carnosic acid, a polyphenolic diterpene that at low concentrations increases the expression of vitamin D and retinoid receptors. Retinoid-X-receptors (RXR) couple with thyroid hormone receptors (TR) to create RXR/TR heterodimers, the principle mediators of target gene regulation by T3 hormone. Carnosic acid also affects retinoic acid receptors (RAR) to act as a TR agonist. Rosmarinic acid has antioxidant and anxiolytic properties. Carnosol has anti-inflammatory properties.*

Sage (Salvia officinalis) has long been recognized as a very rich source of the antioxidant carnosic acid, which as noted above, can increase T3 activity through improved RXR/TR heterodimerization. Salvia officinalis also has memory supportive properties, including memory retention, more efficient memory retrieval and improved mood and cognitive task performance. Sage also has a calming affect due to its ability to gently bind to the GABA/benzodiazepine receptor complex in brain tissue.*

Ashwagandha (Withania somnifera) was found to act directly on the thyroid to raise serum levels of thyroid hormones in animal studies during the late 1990s. Though inconclusive, a case review in late 2005 indicated that Ashwagandha may have the ability to raise serum levels of thyroid hormones in humans. Ashwagandha has also been attributed as having a number of adaptogenic properties including neuroprotective properties.*

Coleus (Coleus forskohlii) contains forskolin, a potent activator of the cyclic AMP-generating system in many tissues including the thyroid, and increases T3 & T4 secretion from thyrocytes in a fashion similar to TSH, though independent from TSH. Forskolin is specifically able to mimic the effect of TSH in regard to iodide uptake, organification of iodine, thyroglobulin (TG) production, and promote secretion of T3 & T4, through an increase in the expression of sodium/iodide symporter (NIS) proteins.*

Brahmi (Bacopa monniera) increased T4 serum concentrations in animal studies. Brahmi has a direct affect on the thyroid, versus an effect on hepatic conversion to T3. Brahmi can improve neurocognitive function, which is often diminished with sub-optimal thyroid function. In human studies, it improves many of the higher order cognitive processes, including speed of visual information processing, learning rate, memory consolidation, memory retention, retention of new information, and decrease the rate of forgetting newly acquired information.*

Hops (Humulus lupulus) can increase the uptake of iodide into the thyroid gland, a fundamental step in thyroid hormone synthesis, through interactions with sodium-iodide-symporter (NIS) proteins. This observation is quite the opposite of many other plant-derived phenolic secondary metabolites such as isoflavonoids, which can potentially inhibit iodide uptake. Xanthohumol, a chalcone found in Humulus lupulus, plays a critical role in supporting normal blood lipid and glucose metabolism. It can also improve mood disturbances such as restlessness and anxiety, as well as sleep disturbances.*

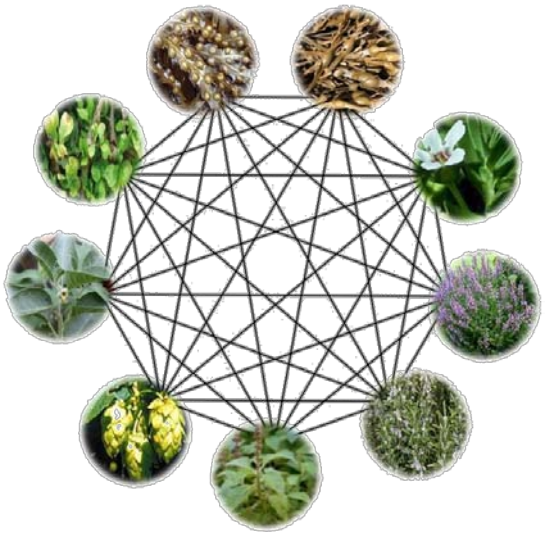
For additional information on the actions of herbs in ThyroMend™, as well as references for the herbs, please visit: www.ThyroMend.com

Synergy of Phytotherapeutic Agents in ThyroMend™

The effectiveness of the ThyroMend™ formulation is in large part due to the synergy that exists between each herb and seaweed in the formulation. These agents are used in the ThyroMend™ formulation to promote the natural production of thyroid hormones by the thyroid gland and also support how well tissues throughout the body respond to thyroid hormones. The following chart shows how the nine phytotherapeutic agents in ThyroMend™ work together **synergistically** to restore normal function of the thyroid. No single herb or seaweed is able to support all seven steps involved in optimal thyroid function. However, when the nine agents are properly formulated, their **synergy is able to support all seven steps involved in optimal thyroid function in a balanced fashion**.

Specific Actions of ThyroMend™

	Fucus vesiculosus	*Ascophyllum nodosum*	*Commiphora mukul*	*Rosmarinus officinalis*	*Bacopa monniera*	*Salvia officinalis*	*Coleus forskohlii*	*Withania sominfera*	*Humulus Lupulus*
Provide Iodine	X	X							
Uptake Iodine							X		X
Produce Hormones					X		X	X	
Convert T4 to T3			X	X			X	X	X
Increase Receptors				X		X			
Bind to DNA			X	X				X	X
Cellular Response			X	X				X	X



Synergy of Thyroid Herbs in ThyroMend™

In maintaining synergy, it is also important to avoid the use of stimulants in an attempt to treat low thyroid function. This includes caffeine containing herbs as well as of amino acids such as tyrosine or phenylalanine, which can be converted to excitatory neurotransmitters such as adrenaline. Even though the body uses tyrosine to create thyroid hormones, there is no evidence that taking additional tyrosine will increase thyroid hormone production. Instead, the additional tyrosine can allow the sympathoadrenal system (SAS) to create even more adrenaline, which may give a feeling of energy, but will interfere with thyroid gland recovery, and can actually lead to more severe symptoms.

By supporting all the steps involved in thyroid functions, this synergistic formulation supports the health of every tissue that responds to optimal thyroid health. This support can help maintain ideal metabolic rate and an ideal body weight. This support can also help maintain normal blood lipids and sugar levels and support memory and mood.

ThyroMend™ is the only formulation designed to restore normal production of thyroid hormones by using thyroid specific herbs and seaweeds that work in synergy. ThyroMend™ should be part of a wellness protocol that includes healthy lifestyle with exercise as tolerated, as well as rest and recreation. A good nutritional foundation which provides vitamin and mineral supplementation and omega-3 essential fatty acids are both important. Follow the dosage guidelines for ThyroMend™ as per label instructions.

Suggested Usage: As a dietary supplement, adults may take **2** capsules each day with food for 1 to 2 weeks or as directed by your healthcare professional.

The dose may then be increased to **4** capsules each day with food for 2 to 4 months or as directed by your healthcare professional.

After 2 to 4 months dosage may be lowered back down to **2** capsules each day with food and may continue on that dosage as needed or as directed by your healthcare professional.

WARNING: If you are pregnant or nursing, or if you are taking prescription medications, consult your healthcare professional before using this supplement.

This product contains NO yeast, wheat, gluten, soy protein, milk/dairy, corn, sodium, sugar, starch, artificial coloring, preservatives or flavoring.

KEEP OUT OF REACH OF CHILDREN.

For optimal storage conditions, store in a cool, dry place. (59°-77°F/15°-25°C) (35-65% relative humidity) Tamper resistant package, do not use if outer seal is missing.

Manufactured by:
Douglas Laboratories
600 Boyce Road • Pittsburgh, PA 15205 USA
www.douglaslabs.com • 1.800.245.4440

Supplement Facts

Serving Size	2 Vegetarian Capsules		4 Vegetarian Capsules	
Servings Per Container	60		30	
Amount Per Serving		**%DV**		**%DV**
Iodine (from seaweed blend)	200 mcg	133%	400 mcg	267%
Proprietary Blend	1,300 mg	*	2,600 mg	*

Seaweed Blend (*Ascophyllum nodosum & Fucus vesiculosus,* entire plant), Standardized Guggulipid (*Commiphora mukul,* gum resin, 2.5% guggulsterones), Standardized Bacopa (*Bacopa monnieri,* aerial parts, 20% bacosides), Standardized Ashwagandha (*Withania somnifera,* root, 1.5% withanolides & 1% alkaloids), Standardized Hops (*Humulus lupulus* aerial parts, 5% alpha bitter acid), *Coleus forskohlii* (root, standardized to 10% forskolin), Sage (*Salvia officinalis,* leaf), & Standardized Rosemary extract (*Rosmarinus officinalis,* aerial parts, 6% carnosic acid)

*Daily Value not established.

Most recent version: www.YourHormones.com/Resources/

ThyroMend™ Dosage Guidelines

(PROTOCOL 242)

Like every good health protocol, the first steps should address the foundations of hormone health, such as diet, foundation nutritional support, rest, recreation and relaxation, hydration & elimination. Foundational nutritional support would include a high grade multiple vitamin-mineral, omega-3 fish oils, and in most cases a multiple strain probiotic.

The **ThyroMend**™ Dosage Guidelines use Protocol 242, a variable dosage protocol designed exclusively for the Hormone Specific Formulations™. Protocol 242 is used to safely and efficiently restore optimal hormone function in three phases: Initiation of therapy, Restoration of optimal function, & Maintenance of optimal function.

ThyroMend™ may be taken in the **evening** to support better sleep. Or, **ThyroMend**™ may be taken in the **morning** to decrease day-time anxiety. The **ThyroMend**™ dosage may be divided into morning and evening if desired. Always take with food.

Phase One: INITIATION

Clinical experiences reveal that patients do much better when they started on a lower dosage during the initiation of the recovery process. In addition, their recovery was easier if they also addressed the foundations of health, such as diet, foundation nutritional support, rest, recreation and relaxation, hydration & elimination.

The initiation dosage for **ThyroMend**™ is **2** (two) capsules each day with food. This should be done for **1 to 2 weeks**.

As with all herbal therapies, the dosage can be further customized to the individual needs of the patient. Occasionally some patients may find that they only need 1 capsule per day during the INITIATION phase.

Phase Two: RESTORATION

To fully achieve restoration of thyroid hormone production and response to tissues throughout the body to thyroid hormones, it is important to maintain consistent and proper dosages of thyroid specific herbs and seaweeds. This restoration phase recognizes that it often takes more energy, and more intensive therapy, to get to a higher level of function and an improved quality of life. Once patients experience the higher level of function and improved quality of life I advise them to stay on that dosage "until you feel good for at least two months." If the patient has a long history of relapses then I advise them to stay on the restoration dosage for at least four months.

The restoration dosage for **ThyroMend**™ is **4** (four) capsules each day with food. This should be done for **2 to 4 months**.

As with all herbal therapies, the dosage can be further customized to the individual needs of the patient. Occasionally some patients may find that they only need 2 capsules per day during the RESTORATION phase.

Phase Three: MAINTENANCE

The maintenance phase recognizes that the restorative dosage that was required to increase level of function, and improve quality of life is typically not required for long term maintenance. When a patient says; "I have been feeling great for two (or four) months! Do I still need to take the full dosage?", then it is time to lower the dosage to maintenance. A majority of patients will be able to maintain a higher level of function and improved quality of life on the lower maintenance dosage of two capsules each day with food. Occasionally a patient needs to stay on the restorative dosage longer than four months, or they may need to return to the restoration dosage after a relapse.

The maintenance dosage for **ThyroMend**™ is **2** (two) capsules each day with food.

Rarely, there will be a patient that will feel better on 3 or 4 capsules long term. However, this may also be considered an extended restoration phase. When patients have difficulty staying in the maintenance phase, I reevaluate their health, such as diet, rest, recreation and relaxation, hydration, elimination, or look for stressors that may be causing them to relapse.

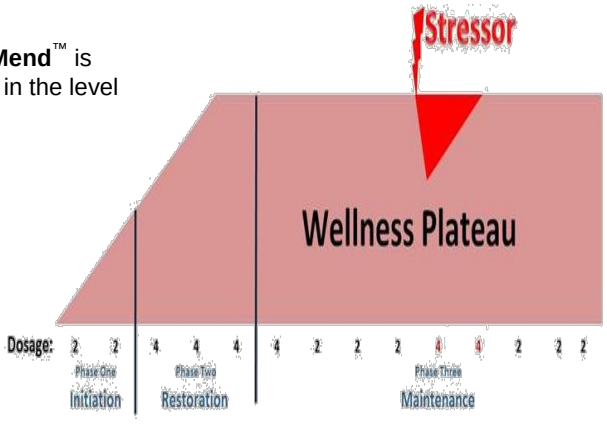
The Wellness Plateau

The following graphic shows how in Phase One (INITIATION) the **ThyroMend**™ is started at two capsules each day with food. This allows a gentle increase in the level of wellness for the first two weeks.

In Phase Two (RESTORATION) the **ThyroMend**™ is taken as four capsules each day with food. During this phase, the level of wellness will continue to improve until it reaches a higher place of wellness, indicated by the Wellness Plateau.

In Phase Three (MAINTENANCE) the **ThyroMend**™ is lowered down to two capsules each day with food because wellness has been attained.

The dosage of two capsules each day with food may be increased back to four capsules each day with food if there is a relapse because of a major stressor. Once health is reacquired, the dosage may again be lowered down to two capsules each day with food.



Hormone Specific Formulations

ThyroMend™ is a ***Hormone Specific Formulation***™ formulated by Dr Joseph J Collins, RN, ND, an internationally recognized pioneer and leader in the personalized restoration of hormone health through the use of phytotherapeutics.

Hormone Specific Formulations include AdrenoMend™, ThyroMend™, TestoGain™, EstroMend™, ProgestoMend™, TestoQuench™ for Men, and TestoQuench™ for Women.

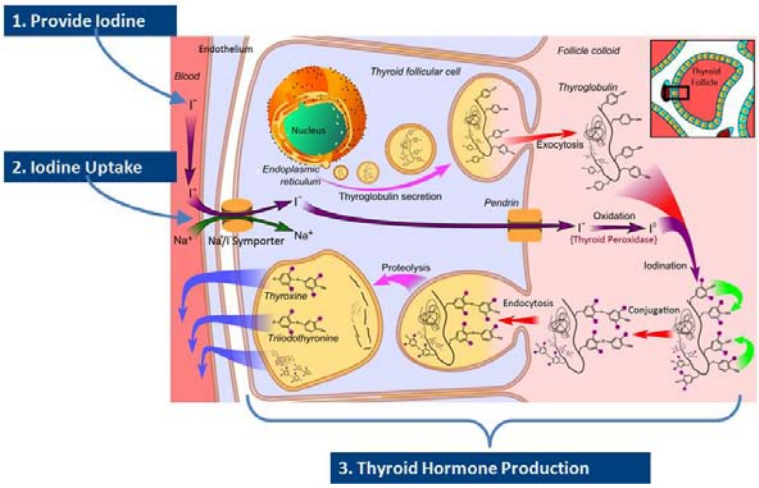
Dr Collins is the author of *Discover Your Menopause Type*, the first book to define the various presentations of menopause and to reveal there are different menopause types®.

* **All information provided in this Professional Guide is the opinion of the author and does not express or represent the opinion of any other party.** Information and statements regarding products have not been evaluated by the Food and Drug Administration and are not intended to diagnose, treat, cure, or prevent any disease.

For more information please visit **www.ThyroMend.com**

SEVEN KEY FUNCTIONS of OPTIMAL THYROID HEALTH

Thyroid Hormone Synthesis

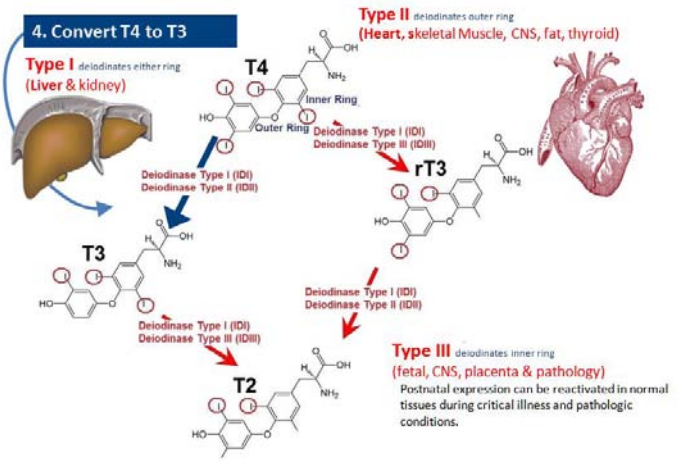


ThyroMend™

1. provides bio-available iodine for thyrocytes
2. increases iodine uptake by sodium-iodide-symporter (NIS) proteins on thyrocytes
3. increases T3 & T4 production and secretion from thyrocytes

Hormone Conversion

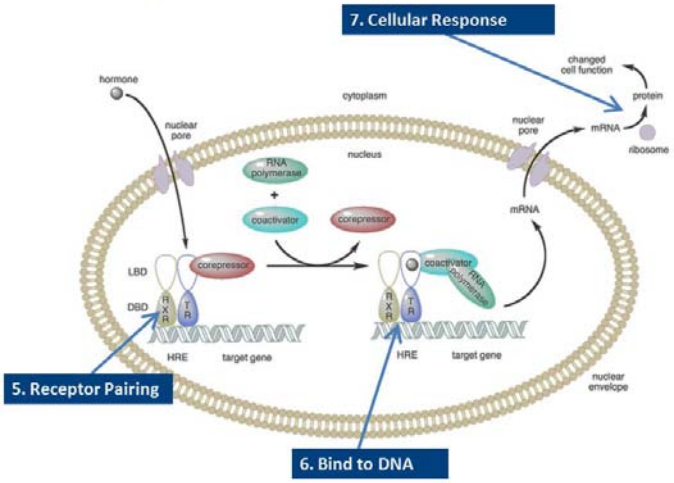
(Iodothyronine Deiodinase Enzymes)



ThyroMend™

4. increases conversion of thyroxine (T4) to the more bioactive triiodothyronine (T3) by liver cells

Response to Thyroid Hormones



ThyroMend™

5. increases RXR/TR heterodimerization of thyroid receptors on target cells throughout the body
6. increases binding of thyroid hormone receptors to DNA by RXR/TR heterodimers throughout the body
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ThyroMend™ is the only herbal formulation to promote the **SEVEN KEY FUNCTIONS** of **OPTIMAL THYROID HEALTH**:

For more information please visit **www.ThyroMend.com**.