

HYPOTHYROIDISM



Subclinical hypothyroidism may be much more common than most people think. It is estimated to occur in a significant percentage of the adult American population. One side effect of thyroid deficiency is high cholesterol. It is very possible that many people are being prescribed cholesterol-lowering statin drugs while their underlying problem—low thyroid function—goes unaddressed. The most common cause of hypothyroidism is an autoimmune disorder known as Hashimoto's thyroiditis. This condition is characterized by an overactive immune system response that floods the thyroid gland with white blood cells that attack the gland. Hashimoto's thyroiditis is more common in women than in men, and there is a genetic component to the disease.

Worldwide, a lack of dietary iodine is the main cause of hypothyroidism. Iodine is necessary for the synthesis of thyroid hormones. Since table salt was iodized in the United States, lack of dietary iodine has not been a major problem, though cases of iodine deficiency are still reported. Besides iodine, thyroid function can be affected by a number of nutrients, including zinc and selenium. Deficiencies in either of these have been shown to increase the risk of hypothyroidism. There is evidence that the standard blood test reference ranges may cause many cases of hypothyroidism to be missed. It is imperative that a more complete thyroid evaluation to rule out thyroid deficiency as a cause of common age-associated problems such as depression, fatigue, and unwanted weight gain be performed.

Hypothyroidism is typically treated with supplemental thyroid hormones. There are a number of approaches to increasing thyroid hormone, including use of synthetic hormones (both T3 and T4) and natural desiccated thyroid hormone from animals. New combination drugs provide fixed ratios of T3 and T4. The choice of which form of thyroid hormone to use is an individual decision, to be made on the

basis of blood tests and effectiveness of therapy.

CONSEQUENCES OF HYPOTHYROIDISM

The vast majority of the thyroid hormone produced by the thyroid gland is T4. However, T4 has only a slight effect on the body's metabolic rate. The more active hormone is T3. To supply the necessary T3, the liver and other tissues convert T4 into T3. T4 and T3 are essential for regulating metabolic processes throughout the body, including maintaining the basal metabolic rate; making more glucose available to meet the elevated metabolic demands; stimulating new protein synthesis; increasing metabolism of lipids and conversion of cholesterol into bile acids, activating lipoprotein lipase, and increasing sensitivity of adipose tissue to hormones that stimulate the breakdown of fat; increasing cardiac output and blood flow; and increasing neural transmission.

If untreated, chronic hypothyroidism can result in myxedema, a rare, life-threatening condition. Mental dysfunction, stupor, cardiovascular collapse, and coma can develop after the worsening of chronic hypothyroidism. Patients may pass into a hypothermic stuporous coma and die. Additional possible complications of chronic hypothyroidism include the following:

- Depression and psychiatric disorders
- Reduced cardiac output
- High blood pressure
- High cholesterol
- Elevated C-reactive protein
- Musculoskeletal system
- Reproductive system problems
- Pregnancy complications

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MANAGEMENT OF HYPOTHYROIDISM

The most common treatment for low thyroid hormone levels consists of thyroid hormone drug replacement therapy e.g. T4 drugs - Synthroid® and Levothyl® (levothyroxine), and T3 drugs - Cytomel®. The goals of thyroid hormone replacement are to relieve symptoms and to provide sufficient thyroid hormone to decrease elevated TSH levels to within the normal range. Armour thyroid (Thyrar), Nathroid, and Westroid are prescription medications that contain desiccated thyroid derived from the thyroid gland of the pig. Armour thyroid (desiccated thyroid) is the preferred medication because it may achieve better results for a wider range of symptoms than thyroid hormone replacement therapy (THRT) alone. While THRT consists primarily of T4, desiccated thyroid contains approximately 80 percent T4 and 20 percent T3, as well as other iodinated compounds. Patients with hypothyroidism have shown greater improvements in mood and brain function if they receive treatment with Armour thyroid rather than Synthroid®.

RECOMMENDATIONS

The supplements in the listed protocol are a general recommendation with an average dosage. By using the CustomVite program, our team of nutritionists has the ability to customize each supplement. In the case of Hypothyroidism, the CustomVite program can help improve your patients overall nutritional status by providing them with optimal dosages. This recommendation does not take into account drug-nutrient interactions. By having the patient provide us with their current prescriptions and supplements through our Lifestyle and Medical History Questionnaire, we can cross reference their information to determine if there are any interactions for their personalized formulation.

HYPOTHYROID PROTOCOL

People with low thyroid are often placed on synthetic hormone preparations, while some are placed on a combination synthetic T3 and T4. Ultimately, which of these drug regimens is best depends on each person's response. Natural glandulars, derived from the thyroid gland of the pig, contain T3 and T4 and most closely resemble human thyroid hormone.

The following supplements have been shown to enhance thyroid function:

SUPPLEMENT	DOSAGE
Vitamin A (Palmitate)	5000 IU
Mixed Carotenoids (from D. Salina)	5000 IU
Vitamin C (Ascorbic acid)	2000 mg
Vitamin E (Natural – Succinate)	400 IU
Selenium (Amino Acid Complex)	200 mcg
Zinc	60 mg
Copper	2 mg
Iodine (Potassium Iodide)	150 mcg
Thiamin (Vitamin B1)	100 mg
Riboflavin (Vitamin B2)	100 mg
Niacin (Niacinamide) (Vitamin B3)	100 mg
Pyridoxine Hydrochloride (Vitamin B6)	100 mg
Folic Acid	400 mcg
Methylcobolamin (Vitamin B12)	1000mcg
Biotin	200 mg
Pantothenic Acid (Vitamin B5)	100 mg
Selenium (Amino Acid Complex)	200 mcg
Chromium Picolinate	200 mcg
Fish Oil	1000 mg
Borage Oil	1000 mg
Magnesium	400 mg
Milk Thistle	200 mg
Tyrosine	1000 mg
Co-Enzyme Q10	50 mg
Carnitine	1000 mg