



FemmenessencePRO™ and Hashimoto's Thyroiditis-Clinician Guidelines

FemmenessencePRO™ is a proprietary formulation of *Lepidium peruvianum* (maca) that works through the hypothalamus-pituitary-thyroid-adrenal-ovarian (HPTAO) axis. As a result of this mechanism of action, FemmenessencePRO may have an impact on thyroid health. In clinical trials, improvements in thyroid hormones were observed.^{1,2}

However, some concerns occasionally arise about whether someone can take FemmenessencePRO with Hashimoto's thyroiditis due to the iodine content and/or because maca belongs to the Brassica family, which is known to contain goitrogens.

The answer is yes. Individuals with Hashimoto's thyroiditis can take FemmenessencePRO.

Concerns about iodine

Iodine is an essential nutrient needed to produce the hormones thyroxine (T4) and triiodothyronine (T3). In the absence of iodine, thyroid stimulating hormone (TSH) can remain elevated and may lead to the development of goiter. The recommended daily intake (RDA) of iodine in adult females is 150 mcg per day, which increases during pregnancy and lactation.³

Based on research, healthcare practitioners largely agree that individuals with Hashimoto's thyroiditis (HT) may need to avoid pharmacological or excess amounts of iodine without balancing other nutrients like selenium, as it can make hypothyroidism worse. While high doses may be problematic for those with HT, it is also important not to create a deficiency in this essential nutrient.

There is 2.5 mcg of iodine per capsule of FemmenessencePRO.

For context, the average multi-vitamin contains 150-225 mcg of iodine, while foods such as 3 ounces of cod contains 158 mcg, ¾ cup of Greek yogurt contains 87 mcg, and one egg contains 26 mcg.³

It is worth noting that FemmenessencePRO contains other nutrients such as calcium, thiamin (vitamin B1), vitamin C, phosphorus, sodium, potassium, and amino acids.²

Concerns about goitrogens

Goitrogens are compounds that interfere with thyroid hormone production and can inhibit the uptake of iodine to the thyroid gland. Sources of goitrogens include foods, toxins, and medications.⁴ Glucosinolates, a class of goitrogenic compounds, are found in foods of the Brassica family. Maca, together with cruciferous vegetables, are part of this botanical classification. There are approximately 120 known glucosinolates, of which maca is noted to contain nine and is considered a rich source of glucosinolates.⁵ In comparison to other vegetables, cruciferous vegetables such as kale, Brussel sprouts, cabbages, and broccoli contain higher levels of glucosinolates.⁶

Despite its potential concern surrounding thyroid health. It is important to note that glucosinolates have many health benefits. This includes providing anti-inflammatory, antioxidant, and chemo-protective effects with research suggesting that a diet high in glucosinolates can help reduce the incidences of several chronic diseases.⁷

In fact, the glucosinolates in *Lepidium peruvianum* are reported to be the biochemical active compound responsible for inducing energizing and fertility-enhancing effects and stimulating gender-specific reproductive functions.^{2,8}

One way to decrease the potentially harmful effects of goitrogens in foods is to cook them.^{4,9} Unlike some maca supplements which are raw (uncooked) powder or capsules, Symphony Natural Health has a proprietary manufacturing process that uses low temperature, controlled pressure, and moisture (as opposed to radiation, solvents, and high heat) to sterilize and pre-gelatinize *Lepidium peruvianum* (that is used to make FemmenessencePRO) increasing water solubility from 68% in raw maca to 99% in our finished products.^{10,11} This process removes the harder to digest starches that are present in raw maca, reducing or eliminating digestive discomfort and concentrates FemmenessencePRO's entire spectrum of active constituents to maximize the benefits of use.



Of note, it is reported that individuals with an iodine deficiency (which is uncommon in the U.S.) who consume high amounts of foods containing goitrogens are at higher risk of slowing their thyroid function.^{4,12} The definition of “high amounts” is not clearly noted in the literature. One study found that consuming 150 grams (~2 cups) per day of crucifers for 4 weeks had no impact on thyroid function.¹³ Myxedema (severely advanced hypothyroidism) resulted in one woman who consumed approximately 6.5 cups of raw Bok choy daily.⁶ While one study indicated that there is not enough evidence to determine what amount of goitrogenic foods would need to be consumed to impair thyroid function⁹, another has suggested avoiding excess consumption of raw Russian/Siberian kale, some collards, and Brussel sprouts, defined as >1 kg/day for several months (~4 cups per day).⁶

FemmenessencePRO and Thyroid Medication

FemmenessencePRO should be taken at least one hour away from thyroid medication. It is suggested to begin at the lighter dose of FemmenessencePRO for 3-4 weeks before increasing to the standard dose. Additionally, it is best to have the patient’s prescribing health care professional routinely monitor thyroid levels while on FemmenessencePRO so adjustments can be made to the medication(s) if needed.

References:

1. Meissner HO, Mscisz A, Reich-Bilinska H, et al. Hormone-Balancing Effect of Pre-Gelatinized Organic Maca (*Lepidium peruvianum* Chacon): (III) Clinical responses of early-postmenopausal women to Maca in double blind, randomized, Placebo-controlled, crossover configuration, outpatient study. *Int J Biomed Sci*. Published online 2006.
2. Meissner HO, Reich-Bilinska H, Mscisz A, Kedzia B. Therapeutic Effects of Pre-Gelatinized Maca (*Lepidium Peruvianum* Chacon) used as a Non-Hormonal Alternative to HRT in Perimenopausal Women - Clinical Pilot Study. *Int J Biomed Sci*. Published online 2006.
3. Iodine-Fact Sheet for Healthcare Professionals. National Institute of Health Office of Dietary Supplements.
4. Petroski W, Minich DM. Is There Such a Thing as “Anti-Nutrients”? A Narrative Review of Perceived Problematic Plant Compounds. *Nutrients*. 2020;12(10):2929. doi:10.3390/nu12102929
5. Tarabasz D, Szczeblewski P, Laskowski T, et al. The Distribution of Glucosinolates in Different Phenotypes of *Lepidium peruvianum* and Their Role as Acetyl- and Butyrylcholinesterase Inhibitors—In Silico and In Vitro Studies. *Int J Mol Sci*. 2022;23(9):4858. doi:10.3390/ijms23094858
6. Felker P, Bunch R, Leung AM. Concentrations of thiocyanate and goitrin in human plasma, their precursor concentrations in brassica vegetables, and associated potential risk for hypothyroidism. *Nutr Rev*. 2016;74(4):248-258. doi:10.1093/nutrit/nuv110
7. Connolly EL, Sim M, Travica N, et al. Glucosinolates From Cruciferous Vegetables and Their Potential Role in Chronic Disease: Investigating the Preclinical and Clinical Evidence. *Front Pharmacol*. 2021;12. doi:10.3389/fphar.2021.767975
8. Meissner HO, Mscisz A, Baraniak M, et al. Peruvian Maca (*Lepidium peruvianum*) - III: The Effects of Cultivation Altitude on Phytochemical and Genetic Differences in the Four Prime Maca Phenotypes. *Int J Biomed Sci*. 2017;13(2):58-73.
9. Babiker A, Alawi A, Atawi M, Alwan I. The role of micronutrients in thyroid dysfunction. *Sudan J Paediatr*. Published online 2020:13-19. doi:10.24911/SJP:106-1587138942
10. Meissner HO, Mrozikiewicz P, Bobkiewicz-Kozłowska T, et al. Hormone-Balancing Effect of Pre-Gelatinized Organic Maca (*Lepidium peruvianum* Chacon): (I) Biochemical and Pharmacodynamic Study on Maca using Clinical Laboratory Model on Ovariectomized Rats. *Int J Biomed Sci*. Published online 2006.
11. Meissner HO, Kedzia B, Mrozikiewicz PM, Mscisz A. Short and long-term physiological responses of male and female rats to two dietary levels of pre-gelatinized maca (*lepidium peruvianum* chacon). *Int J Biomed Sci*. Published online 2006.
12. Cho YA, Kim J. Dietary Factors Affecting Thyroid Cancer Risk: A Meta-Analysis. *Nutr Cancer*. 2015;67(5). doi:10.1080/01635581.2015.1040517
13. Mcmillan M, Spinks EA, Fenwick GR. Preliminary Observations on the Effect of Dietary Brussels Sprouts on Thyroid Function. *Hum Exp Toxicol*. 1986;5(1). doi:10.1177/096032718600500104