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Inositol is one of the most versatile nutrients for promoting mental and emotional wellness, overall relaxation, healthy eating patterns, and restful sleep via its role in neurotransmitter messaging.¹ Additionally, it is a crucial nutrient for promoting female hormonal health through its role in supporting optimal liver function.¹ Inositol helps maintain the proper metabolism of serotonin, and by so doing may help improve conditions that involve poor serotonin function or insufficient levels, including depression and insomnia. Designs for Health's Inositol is available in both capsule and powder form, delivering 900 mg inositol per 1 capsule serving, and 700 mg per ¼ teaspoon powder serving.

Inositol (also known as vitamin B8) is a water-soluble compound well known for its metabolic effects in humans as it plays a critical role in synthesizing cellular messengers and is a necessary component of every cellular membrane in the body, with its highest concentrations in the brain and central nervous system.¹ This critical compound helps support nerve signaling, lipid transport and metabolism, and is essential for maintaining intracellular calcium homeostasis and proper action of insulin.^{1,2} Dietary sources of inositol are found in both animal and plant foods. Myo-inositol (the most abundant form) is found in fruits, beans, nuts, seeds, and grains, but the most bioavailable form of inositol is derived from lecithins, such as soy or sunflower lecithin.

Although inositol is a non-essential vitamin as the liver and kidneys are able to synthesize it, deficiency may occur due to reduced dietary intake, enhanced catabolism or excretion, decreased biosynthesis, specific medications that inhibit sodium/glucose transporter function, and/or suppression of intestinal absorption and cell uptake.² Signs of inadequate inositol intake may include difficulty falling asleep or staying asleep, premenstrual syndrome (PMS), fibroids and other problems caused by female hormonal imbalance, insulin resistance, impaired glucose tolerance, and depressed or anxious moods.

Hormonal Support

Because inositol is essential for hormone signaling, such as with insulin, follicle-stimulating hormone, luteinizing hormone, and thyroid-stimulating hormone (TSH), any imbalance in inositol metabolism or uptake may impair any of these hormones' synthesis, signaling, and storage, which often results in pathological conditions, such as diabetes, subclinical hypothyroidism, polycystic ovarian syndrome (PCOS), and known comorbidities such as metabolic syndrome.¹⁻³

Insulin

Due to its role in hormone balancing, inositol may help to reduce insulin resistance, which affects approximately 40-50% of women with PCOS, the most common cause of anovulatory infertility in industrialized nations.⁴ Inositol supplementation was shown to improve menstrual cycles, ovulation, insulin levels, serum androgen levels, and metabolic irregularities in lean women with PCOS.³ In the presence of high concentrations of glucose in the serum, cellular inositol intake is inhibited; therefore, hyperglycemia leads to inositol depletion in tissues.² In clinical trials, patients with gestational diabetes had significantly higher urinary excretion of inositol, and when they were given 4 grams supplemental myo-inositol, insulin resistance (HOMA-IR), fasting blood glucose, and insulin levels were all significantly decreased after 8 weeks.² Many other clinical trials showed similar results and showed that inositol supplementation is safe during pregnancy and indicates there are no known toxic effects, and only in doses \geq 12 g/day were mild gastrointestinal symptoms noted.^{2,5}

Inositol may help*:

- PCOS, PMS, fibroids, and other conditions associated with female hormonal imbalance
- Promote proper function of thyroid hormone, assisting in improving blood markers associated with autoimmune thyroiditis and subclinical hypothyroidism^{1,9}
- Support normal insulin sensitivity and healthy blood sugar metabolism²
- Support normal blood sugar markers that are associated with metabolic diseases such as metabolic syndrome³
- Reduce incidence of gestational diabetes development⁵
- Promote restful sleep
- Support healthy mood and cognitive function

Female Hormonal Health

Inositol works in partnership with phosphatidylcholine to help the liver metabolize hormones such as estrogen and progesterone. By so doing, inositol may help alleviate PMS, fibrocystic breast disease, fibroid tumors, and a range of other health problems caused by hormonal imbalance. A meta-analysis and systematic review showed that myo-inositol supplementation significantly improved clinical pregnancy outcomes among infertile women undergoing ovulation induction, suggesting that it may improve embryo quality and reduce dysfunctional oocytes or need for ovulation drugs.⁶ In another meta-analysis examining the effectiveness of myo-inositol supplementation in both PCOS and non-PCOS women undergoing IVF, there was a significant reduction in total gonadotropin levels and length of controlled ovarian hyperstimulation.⁷

Thyroid Hormone

One branch of the TSH signaling cascade is inositol-dependent. In patients with diagnosed Hashimoto's thyroiditis and subclinical hypothyroidism, combination therapy of myo-inositol and selenomethionine significantly decreased thyroperoxidase and thyroglobulin autoantibodies, as well as TSH concentrations, compared with selenomethionine alone, and resulted in significant improvement in thyroid hormone levels and overall quality of life.¹⁸ In these studies, myo-inositol reduced the secretion of chemokine CXCL10 induced by TNF- α and IFN- γ , suggesting myo-inositol exerts immunomodulatory and protective effects on human thyrocytes.⁹

Sleep and Mood Support

Inositol supplementation may naturally help the body achieve a more relaxed state, and promote more restful sleep. Taken during the day, inositol may help relieve anxiety and promote a balanced mood as inositol is a key intermediate of second messenger systems used by noradrenergic, serotonergic, and cholinergic receptors.¹⁰ In a clinical trial, depressed adolescents had significantly lower concentrations of myo-inositol in their frontal cortex compared with healthy controls, indicating a potentially disturbed second messaging system.¹¹ The frontal cortex inositol concentrations were associated with shorter sleep duration and increased daytime sleepiness, suggesting that inositol supplementation may aid in improving sleep quality and depressed mood.¹¹ Results from a meta-analysis of inositol for depression and anxiety disorders showed there were marginally more responders in depressed patients compared to placebo, and inositol showed efficacious for lowering depressed symptoms in patients with premenstrual dysphoric disorder (a more serious condition than PMS that causes severe symptoms including irritability, depression, anxiety, panic attacks, and tension).¹² Several other RCTs have demonstrated inositol's efficacy in improving severity of depression, panic disorder, and obsessive-compulsive disorder in dosages ranging from 6-12 grams daily.¹³ Inositol has been shown to be safe in conjunction with antidepressant medications, including SSRIs.¹⁴

Recommended Use:

- **Capsules:** Take one capsule per day, or as directed by your health care practitioner.
- **Powder:** Take 725 mg (approx. ¼ teaspoon) per day, or as directed by your health care practitioner.
- Inositol may be taken directly before bedtime to assist in improving sleep quality.

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

<https://www.designsforhealth.com/techsheet-references/inositol-references.pdf>

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Health care 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.**

To contact Designs for Health, please call us at (860) 623-6314, or visit us on the web at www.designsforhealth.com.

Inositol Capsules

Supplement Facts

Serving Size 1 capsule

Amount Per Serving	% Daily Value
myo-Inositol	900 mg *

*Daily Value not established.

Other Ingredients: Cellulose (capsule), microcrystalline cellulose, vegetable stearate.

Inositol Powder

Supplement Facts

Serving Size 725 mg (approx. 1/4 teaspoon)
Servings Per Container 138

Amount Per Serving	% Daily Value
myo-Inositol	700 mg *

*Daily Value not established.