

Inositol



Clinical Applications

- Promotes Relaxation*
- May Help Support Restful Sleep*
- Influences Healthy Female Hormone Levels
- Helps Support Positive Mental Outlook*
- Supports Mood Balance *

Inositol supports overall relaxation and helps maintain the proper metabolism of serotonin. It is used for the nutritional support of brain wellness and female hormonal health through its role in healthy liver function. It may also aid in attaining a restful night's sleep.

All Absolute Health Formulas Meet or Exceed cGMP Quality Standards

Discussion

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 lecithin, 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 ≥ 12 g/day were mild gastrointestinal symptoms noted.^{2,5}

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.^{1,8} 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



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Inositol



Supplement Facts

Serving Size 725 mg (approx. one scoop)

Servings Per Container about 345

Amount Per Serving	% Daily Value
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myo-Inositol	700 mg *
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*Daily Value not established.

Directions

As a dietary supplement, mix 725 mg (approximately ¼ teaspoon) in water per day or as directed by your health care practitioner.

Consult your healthcare practitioner prior to use. Individuals taking medication should discuss potential interactions with their healthcare practitioner.

Does Not Contain

Gluten, soy, animal, or dairy products from genetically modified organisms (GMOs).



References

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*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.