

## Supplement Sampler Inositol

### **Best Indications**

Inositol, also known as vitamin B8, is a natural isomer of glucose. The evidence is most promising for

- obsessive compulsive disorder (OCD)
- panic disorder
- polycystic ovarian syndrome (PCOS)
- gestational diabetes.

### **Mechanism of Action**

Inositol is an important part of the cell membrane and a natural component of certain plant foods, such as fruits, beans, grains, and nuts. It is relatively well absorbed and distributed based on its unique chemical structure that allows it to move in and out of cells. It plays a role in how neurotransmitters work in the brain and throughout the body, including reversal of desensitization of serotonin receptors. As such, Inositol may have beneficial effects on anxiety and OCD similar to serotonin uptake inhibitors. Further, Inositol appears to induce ovulation in women with PCOS due to its ability to improve insulin sensitivity, which may also be helpful in metabolic syndrome, type 2 diabetes, and gestational diabetes. As a supplement, it is commonly available in two forms: myo-inositol and d-chiro-inositol.

### **Best Studies**

- **For OCD**, there is some evidence, including a 1999 randomized controlled trial, that patients taking 18 g of myo-inositol for 6 weeks improved Yale-Brown Obsessive Compulsive Scale scores compared to placebo.<sup>1,2</sup>
- **For panic disorder and anxiety**, two older studies from 1995 and 2001 suggest that taking myo-inositol orally at 12-18 g per day may be helpful for panic disorder by reducing the severity and rate of panic attacks over 4 weeks.<sup>3</sup> It may also be as effective as fluvoxamine (Luvox, an SSRI discontinued in the U.S.) for panic disorder<sup>4</sup>, with improved Hamilton Anxiety scores for both groups, but no other comparison trials have been reported.<sup>5</sup>
- **For PCOS**, early studies found that d-chiro-inositol induced ovulation in obese women with PCOS by decreasing testosterone levels and increasing insulin sensitivity when taken at 12 g per day for 8 weeks.<sup>6</sup> More recently, studies find that doses as low as 2 g of myo-inositol daily reduce signs and symptoms of hyperandrogenism and improve lipid levels.<sup>7,8</sup>
- **For PCOS undergoing fertility treatment**: Recent studies find that for women with PCOS undergoing fertility treatment, myo-inositol at only 2 grams daily improved oocyte quality, resulting in improved conception outcomes.<sup>9,10</sup> Other studies found that compared to women taking myo-inositol alone, women taking both myo-inositol and d-chiro-inositol at a 40:1 ratio (1 gram of myo-inositol and 27.6 mg of d-chiro inositol) had higher pregnancy rates.<sup>11,12</sup>
- **For gestational diabetes**: In studies of women at high risk for gestational diabetes, supplementation with 2 grams of myo-inositol daily prevented development of this disorder and improved birth outcomes.<sup>13-15</sup>



## Dose

- **OCD:** 18 grams per day, split 2-3 times per day.
- **Panic disorder and anxiety:** 12-18 grams per day, split 2-3 times per day.
- **PCOS:** 2 grams per day, split 2-3 times per day.
- **Deficiency** (particularly with use of carbamazepine, lithium, valproic acid): for patients taking mood stabilizer medications who develop psoriatic skin lesions due to medication-induced Inositol deficiency, 6-12 g per day, split 2-3 times per day.

## Side Effects

Inositol is generally well tolerated, even at doses as high as 12 grams per day. However, long-term studies on safety and tolerance are lacking. It can cause nausea, fatigue, dizziness, and headaches. There are no known adverse reactions with other medications and supplements.

## Cost

Inositol is fairly expensive when used at higher therapeutic doses. For example, according to drugstore.com a bottle of #100 capsules 500 mg Twinlab brand ranges from \$8-16. Calculating the therapeutic dose of 12 g/day (24 capsules per day = 720 capsules per month) would cost \$60-120 per month. NOW brand 1 lb Inositol powder ( $\frac{1}{4}$  teaspoon = 750 mg) costs approximately \$25 -30, which would last approximately one month when taken at 12 g/day (\$25-30 per month) or about 7 months when taken at 2 g/day (\$4 per month).

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### **Disclaimer**

The health benefits from multi-colored whole food eaten with a smile with family and friends significantly trumps any product found in a bottle, be it a supplement or drug!

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