POPULAR SUPPLEMENTS FOR PCOS

ANGELA GRASSI, MS, RDN, LDN
PCOS NUTRITION CENTER
Disclosure

Retailer:
• Ovasitol by Theralogix
• Fish oil by Nordic Naturals
• PCOS Nutrition Center Supplements
Why Take Supplements For PCOS?

- Help to improve labs (insulin, cholesterol, triglycerides)
- Improve ovulation and egg quality
- Replace nutrients that are missing in your diet
  - Deficiency due to malabsorption
  - Diet avoidance
- Optimize nutrient levels
Supplements are not a replacement for a healthy diet & are not weight loss pills
Not regulated by FDA like drugs
Discuss dosage and be monitored by a healthcare professional
What’s the evidence?
Read the label carefully!
Look for Medical-grade quality supplements
Independently tested:
Tips for Taking Supplements

- Take consistently
- If possible try one at time to check for adverse effects
- Evaluate effectiveness
Long-term Metformin Use and B12 Deficiency: Results from DDPOS

- Diabetes Prevention Program Outcomes Study (DDPOS)
- Impaired Glucose Tolerance, Average age 52
- Metformin 850 mg BID (n= 1073) vs. Placebo (n= 1082) for 3.2 years
- PLA and MET B12 levels assessed at 5 years [n=857, n=858] and 13 years [n=756, n=764]

- Low vitamin B12 ≤ 203 pg/ml
- Borderline low levels 204 –298 pg/ml,

B12 Levels at 5 and 13 years in Metformin and Placebo

5 YEARS

Low B12
- Metformin: 4.3%
- Placebo: 2.3%

Low/Borderline B12
- Metformin: 19%
- Placebo: 9.5%

Low B12
- Metformin: 7.4%
- Placebo: 5.4%

13 YEARS

Low B12
- Metformin: 20.3%
- Placebo: 15.6%
The higher the metformin dose, the more deficient people were in vitamin B12. The effect of metformin on vitamin B12 levels was nearly the same in patients with type 2 diabetes and PCOS.

Metformin reduced vitamin B12 concentration in both long (≥3 years) and short (<3 years) term.


Serum B12 levels declined and reached significant lower levels after just six months of treatment in women with PCOS taking 1.5-2.5 grams of metformin daily.

Greibe E et al. Metformin lowers serum cobalamin without changing other markers of cobalamin status: a study on women with polycystic ovary syndrome. Nutrients. 2013 Jul 5;5(7):2475-82.
Vitamin B12

Vitamin B12 Deficiency Causes:
- Fatigue
- Anemia
- Tingling in hands and feet
- Mood and mental changes
- Permanent nerve damage

Recommend PCOS patients who take metformin have their vitamin B12 levels checked annually and supplement their diets with vitamin B12
- Recommended levels > 400
- Optimal levels > 600
- **Therapeutic Dose:** 1,000 mcg Sublingual Methylcobalimum best absorbed
N-Acetylcysteine (NAC)

What is it?

- Antioxidant and amino acid

Purported uses:

- Infertility/androgen-lowering
- Inflammation
- High cholesterol
- Oxidative stress
- Fatty liver
- Bronchitis/immune support

Recommended dosage: 1.6 to 3 g/day

- Side effects: minimal
NAC: Systematic Review of Randomized Trials

- 8 randomized controlled trials with 910 PCOS women
- NAC improved BMI, total testosterone, insulin, and lipid levels
- “NAC had significant improvement in pregnancy and ovulation rate as compared to placebo.”
- NAC showed similar benefits to metformin for improving pregnancy rate, spontaneous ovulations, menstrual regularity, insulin resistance, and cholesterol

Vitamin D

What is it?
- Vitamin and hormone

Uses:
- Great for improving fertility in PCOS!
- Increases mature follicles and regulates periods
- Vitamin D supplementation lowers elevated serum AMH levels
- Anti-inflammatory

Therapeutic amounts: 2,000 IU+ Vitamin D3
- Fat-soluble; take with food
- Absorbs better with Vitamin K1 & K2

Recommended vitamin D levels
- >35: Optimal
- >50: Optimal

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Fish Oil: Omega 3 fats

- **Improves:**
  - TG levels
  - Non-alcoholic fatty liver disease
  - Fertility
  - Depression
  - Skin and hair health
- Maintains cardiovascular health
- Decreases inflammation
- Supports a healthy pregnancy
- Recommended amount: 1 to 4 grams daily
- Purchase high quality, independent tested brands
Myo-Inositol (MYO) AND D-Chiro-Inositol (DCI) Benefits

In women with PCOS:
- Improves insulin sensitivity
- Restores hormone balance
- Improves ovulation and egg quality
- Regulates periods
- Reduces gestational diabetes
- Lowers cravings?
Myo-Inositol (MYO) AND D-Chiro-Inositol (DCI)

What is it?

- Pseudovitamins. Relatives of the B-complex vitamins
- Found in foods (fruits, beans, cereals, buckwheat, etc)
- Inositol-phosphoglycan (IPG) mediators “secondary messengers”
- Regulates activities of hormones including FSH, TSH and insulin
- Women with PCOS have enhanced conversion of Myo to DCI

Recommended dosage MYO to DCI 40:1 ratio (2 to 4 g/day Myo and 50 to 100 g DCI); take with meals

Side effects: Hypoglycemia?
What is it?
- Chinese herb used for thousands of years as a treatment for diabetes & infertility

**Purported Uses:**
- Insulin sensitizer; effects have been compared with that of metformin
- Lowers androgens
- Inflammation
- Cholesterol, fatty liver disease
- May assist in body fat loss

**Dosage:** 400-500 mg, two to three times daily
- What to know: Monitor liver function with long-term use
Magnesium

What is it?
- Fourth most abundant mineral in the body; water soluble

Uses:
- Regulating glucose and insulin
- Liver detoxification
- Lowers blood pressure,
- Anxiety
- Insomnia
- Migraines
- Pain reliever

Recommended daily amount: is 320 mg daily  Magnesium citrate, chloride, glycinate best absorbed
Zinc

What is it?

- Essential trace metal that is required for over 300 enzyme functions
- Works to inhibit the enzyme that converts testosterone into its non-aromatizable form, dihydrotestosterone (DHT)

Uses:

- Role in cholesterol and glucose metabolism, fertility
- Reduces PMS symptoms, hair loss, acne, boils
- After 8 weeks, 41.7% of women who supplemented with zinc saw a significant reduction in hair loss compared to only 12.5% of those taking the placebo.
- Women who supplemented with zinc saw significant reductions in hirsutism in just 8 weeks.

Therapeutic Dosage: 30 mg to 50 mg daily
Co Enzyme Q10

What is it?
- Antioxidant which functions as a cofactor in numerous metabolic pathways, particularly in energy production.

Uses
- Improves egg quality and ovulation
- Migraines
- Lowers cholesterol and insulin levels

Therapeutic dose: 200 mg to 600 mg daily
- Ubiquinol is the form of CoQ10 that is absorbed and utilized best.
Resveratrol

What is it?

- Antioxidant, Found in the skin of grapes, berries, red wine, and peanuts

Uses:

- anti-aging, anticancer, and cardioprotective properties

One Study:

- 30 patients with PCOS were randomly given either resveratrol supplement (1,500 mg) or placebo pill daily for three months.
- Resveratrol group saw a 23% reduction in their total testosterone levels and 22% reduction in DHEA sulfate levels.
- Fasting insulin levels dropped by 32%


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Other Possible Supplements for PCOS?

- Cinnamon
- Chromium
- Alpha-lipoic acid
- Melatonin
- DIM (Diindolylmethane)
  - cruciferous vegetables including Brussels sprouts, kale, bok choy, cauliflower, broccoli
- Vitex (Chasteberry)
  - Not if high LH
- Saw Palmetto
- Peony
- Licorice
In Conclusion

- Supplement use is common in PCOS population.
- Nutrition supplements when added to a healthy diet and lifestyle can offer health benefits and aid in improving ovulation.
- Women with PCOS may be at risk or have a deficiency in certain nutrients.
- PCOS is very heterogeneous. More RCTs are needed to determine benefits of supplement use in different women with PCOS.
- Women with PCOS should discuss the health benefits/risks of supplement use, appropriate dosage, and be monitored by a healthcare professional.
The PCOS Workbook
The PCOS Nutrition Center Cookbook
Nutrition Coaching
Recipes, Nutrition Tips & Information
PCOS Supplements

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