



EstroMetab

Formula Monograph



EstroMetab is composed of dietary supplements that help with estrogen metabolism in women and in men, helping them to maintain a healthy body composition. **EstroMetab** contains the herb kudzu and DIM (diindolylmethane), which help to improve estrogen metabolism in the body. Grape seed extract is an important antioxidant. **EstroMetab** also contains BioPerine®, a patented extract of black pepper that is reported to help improve absorption and bioavailability of dietary supplements in the gastrointestinal tract.

Supplement Facts			
Serving Size: 2 Capsules			
Servings Per Container: 15			
	Amount Per Serving	% Daily Value	Formula Use(s)
Proprietary Blend	805 mg	*	
Kudzu (<i>Pueria lobota</i>) root 5:1 (w/w) extract		*	<ul style="list-style-type: none"> • Isoflavone containing “phytoestrogen” herb • Helps improve estrogen metabolism
Diindolylmethane (DIM)		*	<ul style="list-style-type: none"> • Derived from cruciferous vegetables • Helps improve estrogen metabolism
Grape (<i>Vitix vinifera</i>) seed extract (standardized to a minimum of 95% polyphenols)		*	<ul style="list-style-type: none"> • Antioxidant • Aromatase inhibition • Antiatherogenic
BioPerine® (from <i>Piper nigrum</i> and <i>Piper longum</i> seed) Standardized to 95% piperine		*	<ul style="list-style-type: none"> • Patented black pepper extract • Enhances absorption of formula ingredients, leading to increased bioavailability
* Daily value not established.			

Recommended Uses:

Helps support estrogen metabolism and balance in both women and men.

Recommended Dosages:

1 capsule, 2 times daily.

Product Overview:

Estrogen is thought of as a hormone that is involved in female reproduction, but it also occurs in males in smaller amounts and affects the growth, differentiation and function of many tissues in the body. Estrogen is a term that is used to collectively describe the hormones estradiol, estrone and estriol. In the body, estrogens circulate mainly bound to the sex hormone binding globulin (SHBG) and only unbound (or “free”) estrogens can enter cells and lead to biological effects.¹ Various lifestyle and environmental factors can influence the production, binding, metabolism and function of estrogen in men and women, including:

- Genetics
- Age
- Poor diet, high in refined carbohydrates like white breads, sugars and low in vegetables, low fiber and high saturated fat
- Excessive alcohol consumption
- Poor glycemic control and insulin signaling sensitivity
- Certain medications, including hormone replacement therapy (HRT) and oral contraceptives (OC's)
- Exposure to environmental contaminants (xenoestrogens) such as pesticides, found in industrial chemicals and foods contaminated with agricultural hormones
- Excessive visceral fat

The major method that estrogen affects the body depends on its metabolism. The metabolism of estrogen takes place mainly in the liver through Phase I (hydroxylation) and Phase II (methylation and glucuronidation) pathways, allowing estrogen to be detoxified and excreted from the body. Estrogen is also metabolized in the gastrointestinal tract, and is dependent upon cofactors including the microflora, vitamin B6, B12 and folic acid. Approximately 50% of estrogen conjugates produced in the liver are excreted into the bile and pass into the intestines, where they can become hydrolyzed by the intestinal bacterial enzyme beta-glucuronidase, and are either excreted fecally or reabsorbed.

As women age, their estradiol levels goes down and their estrone levels increase and in men their relative estradiol and estrone levels go up. Both men and women will make more estrogens if they accumulate visceral (belly) fat. Excessive estrogen stimulates tissue growth and can affect the ovaries and breast in women and the prostate tissue in men. Estrone, for example, may convert into three different forms:

- 2-hydroxyestrone protective and active
- 4-hydroxyestrone carcinogen and active
- 16-alpha-hydroxyestrone carcinogen and active

Scientists have identified 2-hydroxyestrone as a “good estrogen,” while 16-alpha-hydroxyestrone and 4-hydroxyestrone (“bad” estrogens) have been associated with the development of certain types of cancer, like breast and ovarian with uterine fibroids, ovarian cysts and fibrocystic breasts.^{2,3}

In 2002, the Women’s Health Initiative study of postmenopausal women with an average age of 65 and older found that taking combination HRT increased the risk of breast cancer, heart disease, stroke and blood clots. The study found that the women using synthetic estrogen in combination with progestin (a product called PremPro), versus women who were on a placebo, had a 26% increased risk of developing breast cancer, 41% increased risk of strokes, a 200% increased risk of blood clots, and a 29% increased risk of heart attacks or heart disease.⁴ Another part of the WHI found that women on PremPro instead of experiencing cognitive improvement, which technically they should have given the role of estrogen and progesterone in brain functions, had double the risk of developing dementia in the 65 and up age group.⁵

As men age their SHBG starts to increase leading to a decrease in free testosterone and estrogen levels also start to increase. This is partly because aging men in some cases convert more of their testosterone into estradiol, by means of the enzyme aromatase.⁶ Of the remaining testosterone, much of it is bound to sex hormone-binding globulin (SHBG). As long as free testosterone is low and the relative estrogen (estradiol and estrone) is high, a man will store fat around their belly, hence the “pot belly”.⁷ Low plasma levels of SHBG and free testosterone have been linked with increased insulin resistance and risk for type 2 diabetes in males.⁸

EstroMetab contains the herbal supplement Kudzu root (*Pueraria lobata*), which contains isoflavones that are reported to bind to estrogen receptors in laboratory studies. It also contains diindolylmethane (DIM), extracted from cruciferous vegetables and reported to help improve estrogen conversion to the friendlier 2-OH estrone form.. ***EstroMetab*** also contains the patented extract of black pepper, BioPerine®, which is reported to help improve absorption and bioavailability of dietary supplements.

Supporting Research:

Kudzu (*Pueraria lobata*) root

Kudzu is an herb that has been used traditionally by Asian cultures as a food source and medicinally to help balance hormonally related symptoms. Kudzu is reported to contain several isoflavones, including puerarin, formononetin, genistin, genistein, daidzin and daidzein, helping with estrogen receptor modulation.^{9,10} Isoflavones are reported in human studies to affect estrogen metabolism by altering the steroid hormone concentrations and menstrual cycle length, thereby demonstrating a potential to reduce the risk for breast carcinoma.¹¹

- Contains phytoestrogen compounds
- Helps improve estrogen metabolism and balance

Laboratory studies have also reported that isoflavones extracted from kudzu may help decrease *aromatization* of estrogen and the reduction in bone mineral density commonly found in aging, similar to the effects of isoflavones found in soy (*Glycine max*).^{12,13}

DIM (diindolylmethane)

Diindolylmethane (DIM), is a phytochemical found in cruciferous vegetables. DIM helps convert active estrogens into friendly metabolites (2-hydroxyestrone), instead of the more aggressive 4-hydroxyestrone and 16-hydroxyestrone metabolites.^{14,15} Several clinical trials have reported the ability of DIM to significantly increase urinary 2:16-hydroxyestrone ratio in as little as four weeks.¹⁶

DIM also helps promote healthy testosterone levels by increasing the 2-hydroxyestrone, which increases levels of free testosterone. DIM also has a direct effect on breast, prostate and thyroid cancer tissues by binding to estrogen receptors in these tissues and stimulating apoptosis via the AMPK signaling pathway.^{17,18,19}

- Found in cruciferous vegetables
- Helps convert estrogen into
- May help improve free testosterone levels
- May help decrease the risk of hormonally related cancers, including breast, prostate and thyroid

Grape (*Vitis vinifera*) seed extract

Grape (*Vitis vinifera*) seed extract is a concentrated extract of antioxidant polyphenols from grape. Grape seed extract is reported in laboratory studies to have aromatase inhibiting properties.²⁰ Grape seed polyphenols are reported to have an antiatherogenic effect.²¹

- Antioxidant
- Supports vascular health
- Aromatase inhibitor

BioPerine® (Black pepper extract)

BioPerine® is a concentrated extract of the phytochemical piperine, obtained from the black pepper (*Piper nigrum* and *Piper longum*) fruit. The peppers used in BioPerine® are cultivated in regions of southern India where black pepper has been used as a medicinal agent for thousands of years. Piperine is a major alkaloid found in black pepper is and most clinical research of black pepper is centered around using high concentrations of piperine. Piperine is reported to significantly enhance the bioavailability of various nutrients through increased absorption.²²

- Proprietary extract of black pepper (*Piper nigrum* and *Piper longum*)
- Helps improve supplement absorption and bioavailability
- Antioxidant

Toxicity, Contraindications, or Side Effects: There is no known toxicity or side effects from taking ingredients found in *EstroMetab*. Talk with your doctor or pharmacist before taking *EstroMetab* if you have or may be predisposed to hormonally sensitive conditions, including breast or prostate cancer and/or if you are taking prescription or non-prescription medications.

DISCLAIMER: Statements made are for educational purposes and have not been evaluated by the US Food and Drug Administration. They are not intended to diagnose, treat, cure, or prevent any disease.

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