



Formula 11

LIVER GALLBLADDER FORMULA

Providing targeted nutrients for GI and biliary hormone support.

AT A GLANCE

Sex hormone balance starts with the gut. When there is sluggish bowel transit, a poor gut microbiome, GI inflammation or poor GI enzyme function, our hormone metabolism can become impaired, increasing the circulation, receptor activity and oxidative potential of all our sex hormones. There can be clues found in sex hormone analysis that demonstrate a need for GI and biliary conjugation support, including elevated total estrogens, elevated 2-methoxy E1, elevated 16-OH E1 and/or Estriol metabolites, and even low DHEA-s (indicating possible poor sulfation and/or inflammation).

Treating GI impairment starts by optimizing diet, reducing stress, and regulating bowel movements. GI and biliary restorative nutrients, digestive enzymes and pre-biotic nourishing herbs can further enhance hormone outcomes and are the focus of this formulation aimed to help optimize the terrain, and in response, harmonizing hormone activity and detox.

Meet Restore

Designed to move, alter and transform our detox intermediates into less reactive and more easily eliminated by-products. Supporting our hormone balance.



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KEY BENEFITS



Optimizes digestion



Targets liver and biliary health to support optimal hormone metabolism



Supports a health estrobolome

FORMULA ANALYSIS

Phosphatidylcholine

Phosphatidylcholine (PC) is derived from choline synthesized in the liver via an enzyme called PEMT. PEMT requires estrogen for activation, but functions on a bell curve, with too little estrogen reducing choline production via lack of PEMT induction, and too much estrogen suppressing PEMT function.[1] Phosphatidylcholine supports biliary health, reduces risk for fatty liver disease, supports cognitive health and neurological function and aids in hormone metabolism, making it a critical nutrient to include in our biliary and GI conjugation formula.[2][3]

Triphala

Triphala is a combination Ayurvedic herbal formula consisting of the fruits of *Emblica officinalis*, *Terminalia bellerica* and *Terminalia chebula*, used primarily for the treatment and restoration of GI-related conditions. It contains Quercetin and Gallic Acid that have been shown to increase Bifidobacteria and Lactobacillus, as well as Chebulinic acid and Urolithins that reduce oxidative stress and reduce inflammation in the GI mucosa[4]. Triphala has been shown to possess free radical scavenging influence in the gut, as well as adaptogenic protection to the gut mucosa from the influence of stress, blood sugar regulatory benefit and improvements to GI motility, making it a key herbal formula to help restore and rejuvenate GI health[5].

Taurine

Taurine is one of the most abundant amino acids in our body, concentrated chiefly in our liver, skeletal muscle, retinas, heart and brain. It is used to support the metabolism of sulfated hormones like estriol and 16-OH E1, to bolster bile production, and can even reduce metabolic syndrome traits including dyslipidemia and central adiposity.[6][7] Estradiol elevations have been shown to decrease taurine levels in our brain and liver.[8] Due to the critical role taurine plays in our body, and the symbiotic relationship it has with hormone detox, supporting adequate taurine levels becomes a primary goal of our GI and biliary conjugation formula.

Calcium-d-glucurate

Calcium D-glucurate is a natural occurring salt of calcium, found naturally in small amounts in fruits and vegetables, like apples, broccoli, Brussel sprouts and cauliflower. It is also made naturally by the gut in small amounts. When ingested as a supplement, calcium d-glucurate is broken down by stomach acid into d-glucaric acid, which further metabolizes into d-glucaro-1,4-lactone in the gastrointestinal tract (9). Its primary role in estrogen metabolism is that it can inhibit beta-glucuronidase. Beta-glucuronidase is released in the gut by enteric bacteria in the colon, and is considered a natural regulator of estrogen metabolism, controlled primarily by the estrobolome. Although methoxy estrogens can excrete into urine directly, studies have found that a considerable amount of estrogen metabolites prefer entering into the GI tract through bile excretion (glucuronidation) for further metabolism (10). This results in estrogen metabolites being subject to beta-glucuronidase. Beta-glucuronidase is an enzyme that can reactivate glucuronidated estrogen in the colon, by removing the glucuronide side-chain that renders the estrogen inert. If beta-glucuronidase is elevated, that can result in higher circulating estrogens (11). If there is an estrogen dominance pattern presenting itself, or if 2-methoxy estrogens are elevated, the use of CDG can be very impactful, in that it will support the stabilization and efficient removal of those methoxy estrogens. CDG has been studied as a potential mineral of interest in reducing breast cancer, colorectal cancer and prostate risk, although more studies are necessary to determine the exact dose and duration for impact (12)

SUPPLEMENT FACTS

Serving Size 2 Capsules
Servings Per Container 60

Amount Per Serving		% Daily Value
Calcium (as calcium d-glucurate)	65 mg	5%
Magnesium (as magnesium glycinate)	30 mg	7%
Zinc (as zinc carnosine)	1.7 mg	15%
Molybdenum (HVP Chelate)	37.5 mcg	83%
Calcium D-Glucurate (Tetrahydrate Form)	500 mg	†
Taurine	150 mg	†
Triphala (fruits of <i>Emblica officinalis</i> , <i>Terminalia chebula</i> and <i>Terminalia bellerica</i>)	150 mg	†
N-acetyl-L-cysteine	100 mg	†
Phosphatidylcholine (<i>Phosphatidyl Choline</i>) (from soya lecithin)	60 mg	†
Papain (from papaya) powder (500 TU/mg)	2775 TU	†

† Daily Value not established

Other ingredients: Vegetable capsule (hypromellose), microcrystalline cellulose, magnesium stearate and silicon dioxide.

SUGGESTED USE

Take 2 capsules 2 times a day with a meal or as directed by your healthcare practitioner.

CAUTION: Do not use if pregnant or nursing. Consult your physician before use if you have a medical condition, or taking any medication. Do not use product if the safety seal is broken or damaged. Keep out of reach of children.

MADE WITHOUT

Wheat, gluten, corn, yeast, animal or dairy products, fish, shellfish, peanuts, tree nuts, egg, artificial colors, artificial sweeteners, or preservatives.

*These statements have not been evaluated by the Food & Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

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