

Hormone Metabolism Support Formula

Professional White Paper for Anti-Aging & Regenerative Medicine Clinics

Formula Per Capsule:

- DIM (Diindolylmethane) – 150 mg
- Broccoli Extract (20:1, florets) – 50 mg
- Calcium D-Glucarate – 50 mg
- BioPerine® (Black Pepper Extract) – 5 mg

Overview

Healthy hormone metabolism becomes increasingly important as individuals age. Rather than focusing purely on estrogen or testosterone levels, functional and anti-aging medicine evaluates how hormones are processed, detoxified, and cleared through the liver and gut–liver axis. This formula supports favorable estrogen metabolite formation, phase II detoxification, antioxidant protection, and improved hormone clearance.

Why Hormone Metabolism Matters

Aging impacts several systems responsible for hormone detoxification, including reductions in liver detox enzymes, higher inflammation, altered microbiome activity, increased toxin exposure, and shifts from hormone replacement therapies. Impaired hormone metabolism may contribute to estrogen dominance, PMS, PMDD, perimenopausal symptoms, aromatization in men, fibrocystic breast changes, and difficulty losing weight. Proper hormone metabolism can:

- Improve the 2-OH : 16-OH estrogen ratio [1,5,10]
- Support testosterone–estrogen balance in men and women [2,3]
- Reduce hormonal recirculation via the gut–liver axis [12,13]
- Improve mood, weight management, and metabolic function

1. DIM (Diindolylmethane) – 150 mg

DIM is derived from cruciferous vegetables and is among the most studied natural compounds for supporting estrogen detoxification. **Clinical Benefits:**

- Increases beneficial 2-hydroxy estrogen metabolites [1,3,5]
- Improves 2-OH : 16-OH balance [5,6]
- Supports SHBG levels [1]
- Reduces aromatization in men on TRT [2]
- Helps balance estrogen–testosterone pathways during HRT / TRT
- Shown in human trials to shift estrogen metabolism towards beneficial pathways [1,3]

2. Broccoli Extract (20:1) – 50 mg

Broccoli extract contains glucoraphanin (a precursor to sulforaphane), indoles, antioxidants, and other compounds central to detoxification. **Clinical Benefits:**

- Activates Nrf2 pathways and phase II detoxification [7,8]
- Enhances glutathione production [8,9]
- Improves estrogen detoxification enzyme activity [10,11]
- Supports processing of environmental endocrine disruptors

3. Calcium D-Glucarate – 50 mg

Calcium D-glucarate supports phase II detoxification and prevents recirculation of used estrogens by inhibiting beta-glucuronidase in the gut. **Clinical Benefits:**

- Prevents estrogen recirculation in the gut [12,13]

- Supports glucuronidation of hormones and toxins [12,14]
- Promotes more efficient hormone clearance

4. BioPerine® (Black Pepper Extract) – 5 mg

BioPerine® increases absorption of nutrients and acts as a bioavailability enhancer. **Clinical Benefits:**

- Increases nutrient absorption and bioavailability [15,16]
- Inhibits CYP3A4 and P-glycoprotein to improve uptake [17]
- Enhances the effectiveness of DIM and broccoli extract

How the Ingredients Work Together

Step 1: Improve Estrogen Breakdown

DIM + Broccoli Extract support creation of favorable estrogen metabolites (2-OH) and reduce harmful pathways. (Refs 1, 5, 10) **Step 2: Strengthen Liver Detoxification**

Broccoli extract activates phase II pathways, enhancing detox capacity and antioxidant protection. (Refs 7–9) **Step 3: Prevent Hormone Recirculation**

Calcium D-Glucarate prevents unwanted estrogen recycling in the gut. (Refs 12–14) **Step 4: Improve Absorption**

BioPerine® ensures consistent nutrient uptake. (Refs 15–17)

Ideal Patient Profiles

Women:

- PMS, PMDD, perimenopause
- Estrogen dominance or low 2-OH estrogen
- Dense breast tissue
- Patients on HRT needing estrogen metabolism support

Men:

- High estrogen from aromatization
- Men on TRT wanting better estrogen control
- Weight gain related to estrogen imbalance

General Anti-Aging:

- Need for detoxification support
- High toxin exposure
- Unfavorable findings on DUTCH estrogen metabolite panels

Safety & Clinical Considerations

- Well tolerated in most individuals
- Mild GI symptoms possible
- Use caution with drugs metabolized via CYP pathways
- Avoid during pregnancy or breastfeeding

- Recommended to monitor hormone labs if combined with HRT / TRT

Conclusion

This formula offers a comprehensive, research-supported method for promoting efficient hormone metabolism, optimizing estrogen detoxification, and supporting healthy hormone dynamics in both men and women. Its synergistic ingredients make it ideal for anti-aging medicine, hormone clinics, and functional health programs.

Scientific References

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