



Understanding the Estrobolome: Your Microbiome's Role in Estrogen Balance

The estrobolome is a collection of gut bacteria and their genes that are capable of metabolizing and regulating estrogen within the body. This microbiome subsystem plays a vital role in maintaining hormonal balance, particularly in women, and has growing clinical relevance in hormone health, cancer risk, and chronic disease prevention.

What is the Estrobolome?

The estrobolome refers to the specific subset of gut microbes that produce the enzyme β -glucuronidase, which is responsible for deconjugating (reactivating) estrogens in the gut. Once reactivated, these estrogens can be reabsorbed into circulation via enterohepatic recirculation, thus influencing total estrogen levels.

Why the Estrobolome Matters

A healthy estrobolome helps to:

- • Maintain balanced estrogen levels
- • Support regular menstrual cycles and fertility
- • Reduce risk of estrogen-related conditions (e.g., fibroids, endometriosis, PMS)
- • Protect against estrogen-driven cancers (breast, ovarian, endometrial)
- • Support bone density, cardiovascular health, and cognitive function

Dysbiosis and Estrogen Imbalance

When the estrobolome is disrupted (a state known as dysbiosis), the result can be either excess or deficiency of circulating estrogens. Elevated β -glucuronidase activity can lead to excessive estrogen reabsorption, while reduced microbial diversity may impair hormonal recycling. This imbalance has been linked to hormone-sensitive conditions, mood disorders, and increased cancer risk.

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Supporting a Healthy Estrobolome

You can promote optimal estrobolome function by:

- • Eating a high-fiber, plant-rich diet (especially cruciferous vegetables)
- • Avoiding processed foods and glyphosate-exposed grains (wheat, corn, soy)
- • Supplementing with targeted probiotics (e.g., Seed, Pendulum GLP-1)
- • Using calcium-D-glucarate (if β -glucuronidase activity is suspected to be high)
- • Limiting alcohol and endocrine disruptors (e.g., BPA, phthalates)
- • Managing stress and supporting liver detox pathways

The estrobolome is a critical yet often overlooked part of hormonal health. By protecting and supporting this gut-hormone connection, you can improve energy, mood, metabolism, and reduce the risk of hormone-driven conditions.

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