

Gut microbes' profound effect on hormones

Janice, a 36-year-old woman, came to see me a couple of years ago complaining of PMS, irregular menses, headaches, and other symptoms primarily related to her cycle. Since her symptoms were obviously related to hormones, the tendency in this situation might be to go directly to using bioidentical hormone replacement therapy or botanicals and supplements that directly impact hormone function. But one of the core tenets of Functional Medicine is to address the underlying cause of the problem, not just manage the symptoms.

In this case (and in most cases of hormone imbalance), I suspected there was a deeper cause. So, I ran a complete panel of tests, as I do with all of my new patients. Janice had SIBO, two parasites, fungal overgrowth, and extremely low levels of beneficial gut bacteria

I explained to Janice that gut microbes can have a profound effect on hormones, especially estrogen. Scientists refer to this connection between estrogen and the microbiome as the “estrobolome.”

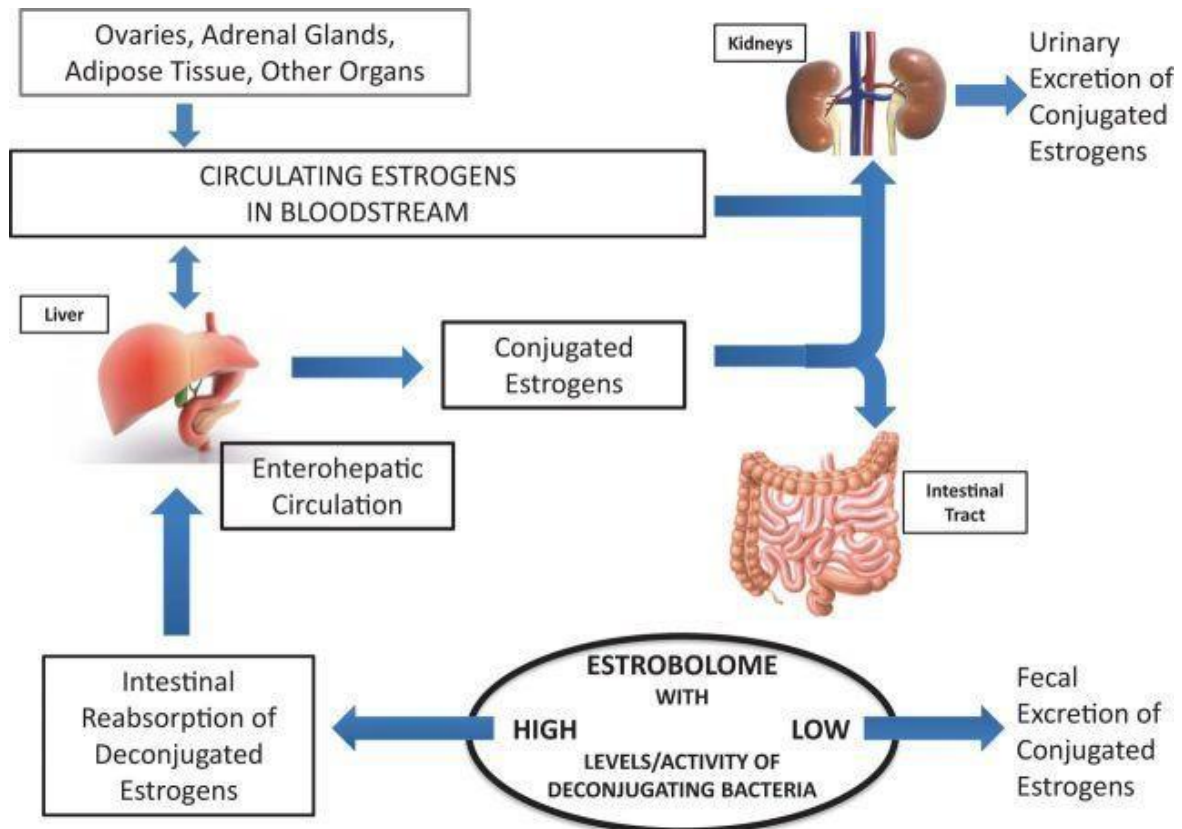
In this week's article, I cover the gut-hormone connection in more detail and explain why addressing gut function in patients like Janice is often the most important first step to take toward correcting hormone levels.

Gut microbiome plays a central role in the regulation of estrogen levels within the body and thus influences the risk of developing estrogen-related diseases such as endometriosis, polycystic ovary syndrome, breast cancer, and prostate cancer. Read on to learn about the connection between gut microbes and estrogen levels and why correcting dysbiosis may be key for preventing and reversing estrogen-related conditions.

For more Information, please refer to:

[The Gut-Hormone Connection: How Gut Microbes Influence Estrogen Levels - Kresser Institute](#)

The Intestinal Microbiome and Estrogen Receptor Positive Female Breast Cancer



Reference: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5017946/figure/djw029-F1/>

The estrobolome and enterohepatic circulation of estrogens. Estrogens are primarily produced in the ovaries, adrenal glands, and adipose tissue and circulate in the bloodstream in free or protein-bound form and first undergo metabolism in the liver, where estrogens and their metabolites are conjugated.

Conjugated estrogens are eliminated from the body by metabolic conversion to water-soluble molecules, which are excreted in urine or in bile into the feces. The conjugated estrogens excreted in the bile can be deconjugated by bacterial species in the gut with beta-glucuronidase activity (constituents of the „estrobolome“), subsequently leading to estrogen reabsorption into the circulation.

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Circulating estrogens exert effects on target tissues including breast, which stimulate cellular growth and proliferation. By modulating the enterohepatic circulation of estrogens, the estrobolome affects both the excretion and circulation of estrogens. In turn, the composition of the estrobolome can be shaped by factors such as antibiotics, other drugs, and diet that modulate its functional activity.

Reference: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5017946/figure/djw029-F1/>

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