

# Female Hormones

## Why They Become Imbalanced



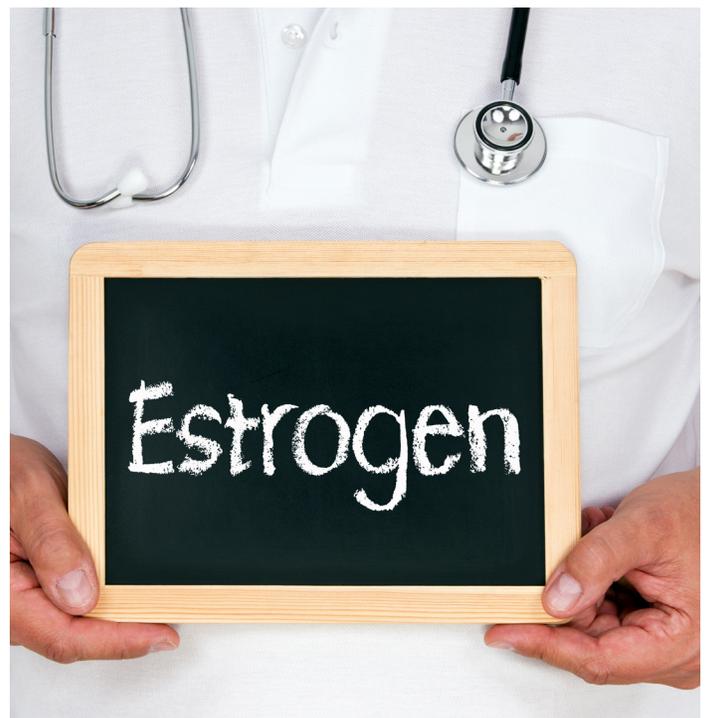
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They make us feel happy, they help us to sleep, they swing our moods in every direction, and they keep our metabolism revving. They have the potential to wreak havoc in our lives, but we just can't live without them. No, this article isn't about your spouse—it's all about hormones!

Hormones are essentially signaling molecules. They are produced in one area of the body and have a target action on an organ that may be close or far away in the body. They travel through the bloodstream to get where they need to go and, once there, they create significant physiologic changes. We have hormones that regulate our reproductive organs, our metabolism and body temperature, our bone health, and much more. Of course, we are aware of some hormones more than others, but this only happens when they shift out of balance.

Let's take a look at the female reproductive hormones. Estrogen is produced in the ovaries and plays an integral role in the menstrual cycle, bone health, pregnancy, and regulating other hormones. Luteinizing hormone (LH) and follicle-stimulating hormone (FSH) are high or low at certain parts of the cycle, depending which phase we are in. Progesterone is another key player, and is produced in the ovaries—and in the adrenal glands to a small degree. It is very important in maintaining pregnancy, signaling the second half of the menstrual cycle, and helping the body to produce cortisol when under prolonged stress.



Cortisol is your main stress hormone and has effects on blood sugar, metabolism, sleep, blood pressure, and much more.

To summarize the female hormone cycle, estrogen is high for the first half of the 28-day cycle, known as the follicular phase. LH and FSH spike at the halfway mark on day 14, causing ovulation to occur. Progesterone is important in the second half of the cycle—the luteal phase—and is a key part of preparing the body in the event that conception takes place. In an ideal world, every woman would be on a 28-day cycle with these perfectly synchronized hormone levels, and never experience premenstrual symptoms. That means no bloating, breast tenderness, ankle swelling, headaches, cravings, or mood swings! Unfortunately, this isn't the case for many women, and the discomfort of PMS has left many women taking sick days or turning to pharmacologic aids.

So, what causes our hormones to become imbalanced?

## Stress

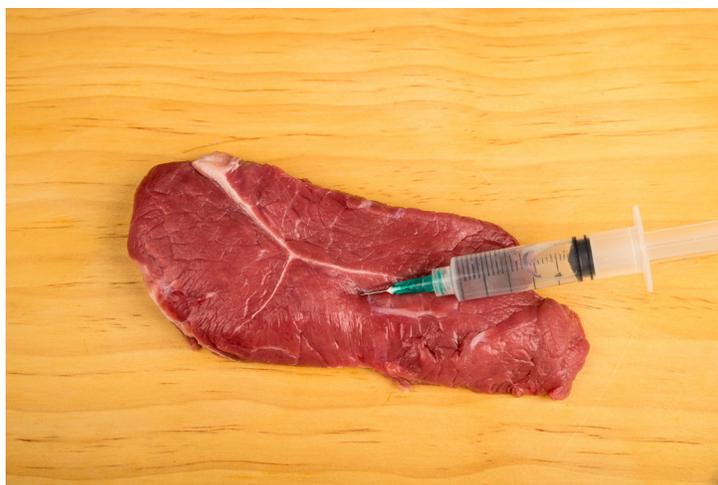
Cortisol is not a reproductive hormone, but since it can take from progesterone stores to meet the demands of a stressful situation, it can create a lot of imbalance on your reproductive hormones. If you consider a teeter-totter with estrogen on one side and progesterone on the other, if we start to take progesterone and send it elsewhere, it will look as if there is an estrogen excess, even though estrogen levels haven't changed. Symptoms of high estrogen include breast tenderness, volatile emotions, yeast infections, weight gain, joint pain, headaches, and fluctuations in blood sugar.<sup>[1]</sup> Symptoms of progesterone deficiency include many of the symptoms of estrogen excess, along with insomnia; amenorrhea; hair loss; and dry skin, hair, and nails. If this is starting to sound familiar, implementing stress-management tools and supporting your adrenal glands are the best ways to help your hormones rebalance over time.

## Medications

Also known as exogenous sources of hormones, the birth-control pill and any kind of hormone-replacement therapy are both ways we intentionally imbalance our hormones. There are many different kinds of oral contraceptives, but the majority have some combination of estradiol and progestin, which are metabolized by the liver.<sup>[2]</sup> The by-products of estrogen metabolism are often difficult for the liver to metabolize and can build up in the body,



increasing the overall level of estrogen. Looking back at our analogy of the teeter-totter, if we are now increasing estrogen levels, it is going to look like we have a progesterone deficiency, and we will end up with a similar symptom picture to our stressed-out, high-cortisol individual. Things are a little different when we consider hormone-replacement therapy in postmenopausal women, because the endogenous production of hormones is significantly lower. However, as with the addition of any hormone, ensuring optimal liver and bowel function is integral to ensuring efficient metabolism and preventing buildup.



## Hormones in Food

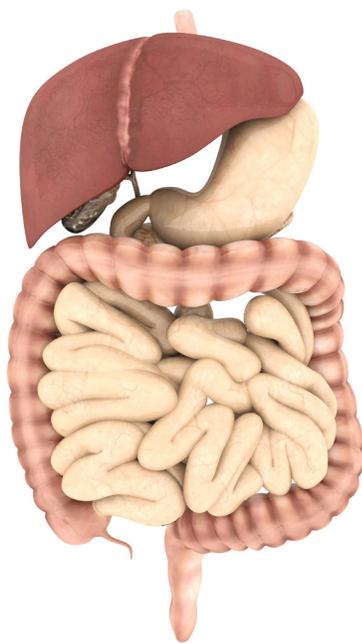
This is one of those things that everyone is aware of, but there is very little publicity about it, and we feel almost helpless to avoid it. Hormones are added to most meats, fish, eggs, and dairy products that we find in our regular grocery stores. According to the FDA, a number of steroid hormone drugs have been approved for use in beef cattle and sheep, including natural and synthetic forms of estrogen,

progesterone, and testosterone.<sup>[3]</sup> The hormones are added to increase the growth rate of the animal and encourage them to convert food into meat. Implants are often added under the skin or the back of the animal's ear, and the animal is constantly tested to make sure the hormone levels are safe for human consumption. Whether natural or synthetic hormones are used, very little is known about the effects of these hormones on humans—and especially in those consuming these products from a young age. In 2011, an article was written in the *Huffington Post* discussing the early menarche that is found in North American females. They found that the average age of menarche in the Western world began to decline in the early twentieth century due to the increased consumption of animal products, increased calorie intake overall, and resultant increase in childhood obesity.<sup>[4]</sup> The troublesome part of this discovery is the increased risk of certain cancers in these young women with prolonged estrogen exposure, and furthers the importance of avoiding hormone-fed animal products.

## Poor Lifestyle Habits

It's no secret that obesity is on the rise in North America, and so are all our associated chronic diseases. The prevalence of childhood obesity is higher than it has ever been, and though the importance of exercise is growing in the school system, this must also be enforced at home to be successful. Children and adults who exercise regularly tend to be happier; sleep better; and have healthier appetites, improved energy, focus, and

concentration overall.<sup>[5]</sup> Since fat tissue stores hormones, if we are in a state of hormone imbalance and are not exercising regularly, we won't be able to mobilize the stored hormones. On the other hand, excessive exercise can also be detrimental to our health, and if our body-fat percentage drops low enough, there is nowhere to store hormones, and the entire menstrual cycle can disappear. Moderation is key for most things, and exercise is no different! Just make sure you are enjoying whatever routine you are in, and giving yourself the necessary breaks and nutrients to help your muscles recover.



## Overwhelmed Routes of Elimination

The ability of our bodies to digest foods, absorb nutrients, and excrete waste is the best place to start with any treatment plan. Healthy fats in the diet are responsible for the production of our hormones, essential vitamins help the hormones carry out their functions, and the liver is mainly responsible for breaking down the hormone once its job is done. We have four main pathways of elimination: skin, lungs, bladder, and bowels. We've already discussed the importance of exercise in breaking down fat stores and releasing waste products through the skin in the form of sweat. Next, our lungs really only help us when we are sick and are coughing up mucous. The kidneys are an important filtration system for water-soluble compounds metabolized by the liver and transported through the blood. Drinking adequate

water in the day ensures that our kidneys have something to filter and supports our fluid elimination. Because hormones are fat-soluble compounds, they are metabolized by the liver and excreted through the bowels. Constipation increases our hormone imbalance and allows excess hormones to be reabsorbed from the intestines back into the blood. Take care of your digestive health, and keep your pathways of elimination open for optimal health all around!

The management of hormone imbalance is a very individual thing, and will depend whether you are dealing with a picture of excess or deficiency and where the root cause lies. As a general rule for all women struggling with hormones, exercise regularly, drink adequate water, and fortify your diet with healthy fats and fibre to regulate the bowels. Get at least eight hours of sleep per night, and find a way to incorporate meditation and stress-management techniques into your day. If you meet all these requirements and feel like you need additional support, chat with a naturopathic doctor about the variety of natural tools and botanical herbs with powerful actions on regulating the female hormone cycle.

## References

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