

## Chapter 1

# Hormones: Your Body's Mighty Messengers

**Y**ou are not behind.

I know this for a fact—and as a doctor and researcher, I don't use that word lightly.

How do I know this? Because for the past 10 years, I've been an adjunct faculty member at a top school of graduate studies. My students are among the brightest minds in the medical field and are completing their doctorates.

Every time I begin my class on female fertility, I give them a pop quiz.

I ask my students to pull out a blank piece of paper and draw the menstrual cycle.

"I want you to label each phase of the cycle," I instruct them. "Write down the main hormones involved in each phase and what each hormone does—not only in the uterus but across the whole body."

You know what I get? Blank stares. Awkward silence. Maybe a half-hearted diagram or two. But very few have a solid grasp of what I believe should be foundational education for every adolescent, and certainly every healthcare provider. This is Human Physiology 101!

No medical student wants to be caught unprepared. I probably don't make the most popular first impression on my new students, but I make one they won't forget.

The point of the exercise is simple and powerful: if you're going to care for people—especially women—you need to understand not just how life *begins* but how it *sustains*.

And that's how I know: you are not behind.

You are not behind for not understanding the basics of your own cycle.

You are not behind for not knowing what your hormones are doing or what hormones even *are* in the first place.

You are not behind.

You have been failed by a system that doesn't teach this information, not even to most medical professionals.

## **Missing the Basics**

When healthcare providers lack even the most basic understanding of women's hormones, they can't possibly serve women at the level they need and deserve. When women lack this information, too, they can't advocate for themselves at the doctor's office or even know which questions to ask.

There is a knowledge gap on both sides—provider and patient—and this creates a negative ripple effect. The knowledge gap results in a dangerous care gap, and women are the ones who pay the price.

## **Longer Lives, but Poorer Quality**

Statistically, women live longer than men but spend 25% more of their lives in poorer health.<sup>1</sup> This is what researchers call a “morbidity disadvantage.”

Many chronic illnesses, including the ones that aren't fatal but negatively affect your quality of life, can be traced back to hormonal imbalances. Hormones shape immunity, metabolism, pain perception, cardiovascular function, neurological patterns, and how women respond to medications, yet hormonal dynamics have been minimized or misunderstood for decades. Diseases that disproportionately affect women, including endometriosis, polycystic ovary syndrome (PCOS), chronic pain conditions, autoimmune disorders, and many mood disorders, have been underfunded, under-researched, and often dismissed as "complex" or "too variable" to study. The result is a persistent, systemic blind spot: a health landscape where women are living longer but living sicker, not because their bodies are inherently flawed but because the science meant to support them never kept pace with their needs.

Despite the enormous influence that hormones have on our well-being, they are deeply misunderstood, even in medical communities.

## **Why We Know So Little About Women's Bodies**

Why are so many women in poor health? And why are hormonal issues chronically underdiagnosed and undertreated?<sup>2</sup>

One of the biggest reasons is lack of research. Until recently, women were excluded from most medical research trials. Why? Primarily to avoid harming unborn fetuses from testing that might lead to birth defects. In 1977, the Food & Drug Administration (FDA) issued a policy advising researchers to avoid doing testing on "women of childbearing potential." As journalist Maya Dusenbery explains in her award-winning book *Doing Harm: The Truth About How Bad Medicine and Lazy Science Leave Women Dismissed, Misdiagnosed, and Sick*,<sup>3</sup> this effectively meant all women of reproductive age were excluded, regardless of whether they intended to have children or not, setting women's health research back by decades.

This policy was problematic for many reasons, the most obvious being that it presumes that every woman *wants* to have children or have *more* children. And the policy had unintended consequences. Whenever a new procedure or medication hit the market, it had been tested on men, but not women. Dusenbery documents how these policies have had real, life-threatening consequences: drugs withdrawn in the late 1990s were nearly twice as likely to cause harm in women, simply because no one had tested for sex differences in metabolism, side effects, or dosage.

To quote journalist Olivia Cassano, “Much of modern medicine is based on research done exclusively on male bodies, and the consequences of this research gap are significant—sometimes even life-threatening.”<sup>4</sup>

But avoiding the possibility of harming unborn children isn’t the only reason why women have been excluded from research. In the past, women’s hormonal fluctuations were deemed “too complicated” for many studies. Including women as test subjects would mean additional nuances to consider (and additional costs) that researchers didn’t want to take on. As Dusenbery notes in *Doing Harm*, women were often perceived as “outliers” who might skew study results, rather than what they actually are: more than half of the world’s population. For all these reasons—cost, complexity, gender biases in the medical community—women were pushed out of studies that ought to have placed them right in the center.

Then in 1993, things changed, at least, somewhat. That’s when the U.S. National Institutes of Health (NIH) released the Revitalization Act,<sup>5</sup> which made it mandatory to include women in clinical trials funded by the NIH, unless a clear and compelling reason for exclusion could be provided. Although this act was a step in the right direction, it wasn’t a miracle fix, for two major reasons. One, not all trials are funded by the NIH. Two, because women were excluded from research for so many decades, this created a cumulative effect, a research deficiency that is so large it will take many more decades to close it. Even after some policies were

lifted, the inertia of exclusion had already shaped the healthcare field. In short, we still have a lot of catching up to do.

And so, what we have today is a massive void in clinical knowledge. Even now, women's hormonal concerns often fall outside of conventional diagnostic models and treatment protocols. If it doesn't fit neatly into a box, many doctors don't know what to do with it. Hence, that is why so many women get turned away when they ask to have their hormones tested. Most doctors don't even know the basics of what they would be testing for, the appropriate timing of the cycle, or what to do with the results.

Because of this gap in research and the resulting scarcity in knowledge, when women describe distressing symptoms, they often get dismissed. I've had countless patients who go to their doctor's office and describe frustrating issues: weight gain, fatigue, low libido, skin issues, depression, anxiety, and beyond, and they are told, "Everything on your lab report looks normal." "I'm not seeing anything that looks concerning." Or, "Welcome to being in your 40s!"

If the patient pushes further, insisting that something just isn't right, they are often told, "Let's keep an eye on things" (which essentially means, "Come back and see me if things get really, really bad, so bad that you're no longer able to function"). In the meantime, they are offered a birth control prescription or antidepressants and sent on their way.

Let's call this what it is: *medical gaslighting*. This is when a healthcare provider dismisses or downplays a patient's concerns, minimizing, brushing aside, or invalidating a woman's experience. This doesn't happen on purpose or because the provider doesn't care; most do. It happens because of a lack of knowledge that leaves both patients and providers in the dark.

This is why millions of women are told:

- "There is nothing wrong." (Even when they *know* deep down this is not the case.)

- “What you’re experiencing is normal.” (Just because something is common doesn’t mean it’s okay.)
- “You need to wait until you are in severe distress, so severe that you are nonfunctional, and only *then* will medical professionals leap into action to help you.” (This part is unspoken but implied through a provider’s inaction.)

All this dismissal chips away at our confidence. We question ourselves and wonder, “Maybe they are right? Maybe this is just what it means to be a woman? Maybe feeling ‘not great’ is normal? Perhaps this really is as good as it gets?”

## Education Is the First Step

What is the solution? How can we create a better world—a world in which women’s pain is taken seriously, conditions are diagnosed and treated appropriately, and women spend most of their lives in excellent health?

The first step is to educate yourself about your own body. You need to understand what hormones are, how they communicate with one another, and how they impact your well-being.

It’s challenging to choose the right healthcare provider, get your concerns taken seriously, and collaborate with your wellness team successfully, when you don’t have the knowledge (or language) to describe what’s going on.

Starting now? We’re going to change that.

You have probably heard the term *financial literacy*. That’s the idea that every human being needs a basic understanding of how to earn, spend, save, and invest for the future. Everyone needs money to navigate the world; therefore, this information should be in everyone’s hands—not just professional financial advisors!

The same is true when it comes to your body. We need *hormone literacy*, too.

Every woman should know the information we're about to cover. My hope is that you'll take this in, feel more empowered, and one day pass the info along to a young woman in your life.

## **What Are Hormones?**

Hormones are the mighty messengers of your body. They are chemical signals that travel through your bloodstream and lymph fluid, delivering instructions to organs and tissues to help keep everything running smoothly.

Your hormones influence nearly every aspect of your health—not just your menstrual cycle, sexual health, and reproduction. Your metabolism, sleep, energy levels, mood, brain function, muscle health, bone density—hormones impact all of these.

When hormones are in balance and communicating properly, your body thrives. You feel vibrant. You flourish. You feel like “your best self.”

But if they are too low, too high, or miscommunicating, you feel it. When there is a disturbance in the network, your body starts speaking to you through symptoms. At first, whispering. Later, shouting.

These symptoms are not a punishment, they're a signal. This is your body's way of saying, “Help, please! Something is not right. Please pay attention to me. . .”

## **Meet the Endocrine System**

You might be familiar with some of the major systems in your body. For instance, your digestive system breaks down food into fuel and waste. Your cardiovascular system transports oxygen around your body. Your nervous system scans for potential threats in your surroundings and notifies your brain that “it's safe to relax” or “warning, danger!” And your endocrine system controls hormone production.

The endocrine system consists of a network of glands (think: pituitary, thyroid, parathyroid, adrenals, pancreas, ovaries, and in men, testes) that produce and release these mighty messengers.

Your endocrine system produces more than 50 hormones. You don't need to memorize every single one of them. But it's a good idea to get familiar with *some* of them—the key players.

Let's start with the top five you need to know.

**Meet the VIHs: Very Important Hormones**

The VIPs of the female hormone world (or rather, VIHs) are estrogen, progesterone, testosterone, cortisol, and melatonin. Here's how these hormones impact your body, the role they perform, and what it feels like when they're too low or too high:

| <b>Estrogen</b><br><b>The Radiance Hormone</b>                                                |                                                                                                                                                                                                                                                                                   |                                                                                             |                                                                        |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <i>Affects</i>                                                                                | <i>Role</i>                                                                                                                                                                                                                                                                       | <i>Too Low</i>                                                                              | <i>Too High</i>                                                        |
| Mood, memory, motivation, metabolism, bones, heart, gut, muscles, skin, and body temperature. | Estrogen energizes your whole body. It balances brain chemicals like serotonin and dopamine, protects your heart and bones, boosts metabolism, and gives your skin, mood, and mind a vibrant, youthful glow. It lights you up from the inside out, giving you a glow of vitality. | Drained energy, dull mood, disrupted sleep, stiffness, and a sense of <i>slowing down</i> . | Tension, irritability, headaches, puffiness, and emotional volatility. |

| <b>Progesterone</b><br><b>The Calm, Clear Mind Hormone</b>                  |                                                                                                                                                                                                                                                               |                                                                       |                                                                                            |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <i>Affects</i>                                                              | <i>Role</i>                                                                                                                                                                                                                                                   | <i>Too Low</i>                                                        | <i>Too High</i>                                                                            |
| Mental clarity, calm, sleep, digestion, immunity, and reproductive balance. | Progesterone supports gamma-aminobutyric acid (GABA), the neurotransmitter that promotes deep sleep, stabilizes mood, protects the brain, soothes digestion, and prepares the body for rest, repair, and reproduction; the hormone of serenity and stability. | Tired, but wired: anxious, restless, sleepless, and emotionally thin. | Calm, but heavy: Fatigue, bloating, slowed digestion, low motivation, and mental dullness. |

| <b>Testosterone</b><br><b>The Get It Done! Hormone</b>                                               |                                                                                                                                                                             |                                                                                  |                                                    |
|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------|
| <i>Affects</i>                                                                                       | <i>Role</i>                                                                                                                                                                 | <i>Too Low</i>                                                                   | <i>Too High</i>                                    |
| Drive, confidence, assertiveness, motivation, libido, energy, focus, muscle tone, and bone strength. | Testosterone fuels energy, motivation, and confidence. It sharpens focus, builds strength, enhances libido, and gives you the inner spark to take action and feel powerful. | Low energy, low sex drive, less muscle tone, and loss of inner “drive” or spark. | Edgy, impatient, breakout-prone, and overly amped. |

| <b>Cortisol</b><br><b>The Stress and Resilience Hormone</b>                                           |                                                                                                                                                                                                    |                                                                                  |                                                                                          |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <i>Affects</i>                                                                                        | <i>Role</i>                                                                                                                                                                                        | <i>Too Low</i>                                                                   | <i>Too High</i>                                                                          |
| Stress response, stamina, energy, focus, sleep, immunity, metabolism, mood, and inflammation control. | Cortisol is your body's built-in alarm system. It mobilizes energy, sharpens focus, regulates inflammation, and helps you adapt to physical or emotional stress so you can stay alert and survive. | Drained, foggy, easily overwhelmed, and burnt out, unable to rally under stress. | Constantly on, tense, restless, gaining belly weight, with trouble relaxing or sleeping. |

| <b>Melatonin</b><br><b>The Rest and Repair Hormone</b>                                                        |                                                                                                                                                                                                                             |                                                                              |                                                                       |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <i>Affects</i>                                                                                                | <i>Role</i>                                                                                                                                                                                                                 | <i>Too Low</i>                                                               | <i>Too High</i>                                                       |
| Sleep quality, circadian rhythm, cellular repair, immune strength, metabolism, mood, reproduction, and aging. | Melatonin is your body’s “darkness signal”—it synchronizes your sleep–wake cycle, triggers nighttime cellular repair, supports immune defense, regulates reproductive hormones, and shields the body from oxidative stress. | Restless nights, brain fog, low immunity, and feeling older or “off rhythm.” | Too sleepy, foggy, or emotionally flat and “stuck in nighttime mode.” |

To recap, estrogen, progesterone, testosterone (yes, women produce this hormone too!), cortisol, and melatonin are five of the most important hormones in your body. If your life were an HBO series, these five are the main characters—the stars of the show. However, there are many other hormones that perform important functions, too.

Two supporting cast members you need to know are triiodothyronine (abbreviated as T3) and thyroxine (aka T4), which are produced by your thyroid gland. They aren’t at the center of every episode but still play an important role in the story.

| <b>Triiodothyronine (T3) and Thyroxine (T4)</b><br><b>The Metabolic Duo</b>           |                                                                                                                                                         |                                                                                                   |                                                                                                    |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <i>Affects</i>                                                                        | <i>Role</i>                                                                                                                                             | <i>Too Low</i>                                                                                    | <i>Too High</i>                                                                                    |
| Energy, metabolism, mood, menstrual cycles, hair/skin health, temperature regulation. | Thyroid hormones are like your body’s thermostat and conductor, setting the pace for how every cell produces energy and how efficiently your body runs. | Fatigue, brain fog, weight gain, hair thinning, constipation, irregular cycles, and feeling cold. | Anxiety, heart palpitations, unintentional weight loss, heat intolerance, and difficulty sleeping. |

Now you've been introduced to a few of the most important hormones in your body. But what about all the other hormones? They matter, too.

Let's meet a few more of these chemical messengers.

## Additional Hormones to Know

As I mentioned earlier, your body produces more than 50 hormones. Each one has a unique job. While I won't cover all of them in this book, I want to introduce you to some.

Do you need to memorize all of them? No. However, it's a good idea to take a quick glance so you're somewhat familiar with these terms.

Why do this?

One, glancing at this big list of hormones will give you an instant appreciation for how incredible hormones are and all the various things they do. This helps you understand why hormone care needs to be a central focus in your wellness plan, not an afterthought.

And two, because the next time you're meeting with someone on your healthcare team, you'll be more informed about your body. You'll know the names of the various chemical messengers and what they do. You'll have the vocabulary to ask thoughtful questions about your health. Knowledge is power.

In each of the following tables, at the top I state the endocrine gland that produces the hormones beneath it:

| <b>Hypothalamus</b><br><i>Located in the center of the brain</i> |                                                                                                                                                        |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thyrotropin-releasing hormone (TRH)                              | Triggers the pituitary to release thyroid-stimulating hormone (TSH), which stimulates the thyroid to regulate metabolism, energy, and body temperature |
| Growth hormone-releasing hormone (GHRH)                          | Signals the pituitary to release growth hormone (GH), supporting tissue repair, muscle growth, and metabolic function                                  |

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|                                                  |                                                                                                                                           |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Corticotropin-releasing hormone (CRH)            | Stimulates the pituitary to release adrenocorticotrophic hormone (ACTH), activating the adrenal glands and initiating the stress response |
| Somatostatin (growth hormone-inhibiting hormone) | Inhibits the release of growth hormone (GH) from the pituitary, helping regulate growth and metabolism                                    |
| Prolactin-inhibiting hormone (PIH)               | Suppresses prolactin release from the pituitary, regulating milk production and reproductive balance                                      |

| <b>Pituitary Gland (Anterior)</b><br><i>Located at the base of the brain</i> |                                                                                    |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Luteinizing hormone (LH)                                                     | Stimulates ovulation and corpus luteum formation; triggers progesterone production |
| Follicle-stimulating hormone (FSH)                                           | Stimulates growth of ovarian follicles and estrogen production                     |
| Prolactin                                                                    | Promotes milk production postpartum; can suppress ovulation when elevated          |
| Adrenocorticotrophic hormone (ACTH)                                          | Stimulates cortisol production by the adrenals; involved in stress response        |
| Thyroid-stimulating hormone (TSH)                                            | Regulates thyroid hormone production—vital for metabolism and hormonal synergy     |

| <b>Pituitary Gland (Posterior)</b><br><i>Located at the base of the brain</i> |                                                                                                |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Oxytocin                                                                      | Released directly into the bloodstream to support childbirth, lactation, and emotional bonding |
| Vasopressin (antidiuretic hormone, ADH)                                       | Helps regulate hydration and blood pressure by signaling the kidneys to retain water           |

| <b>Pineal Gland</b><br><i>Located in the center of the brain, in a groove between the two hemispheres</i> |                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Melatonin                                                                                                 | Regulates circadian rhythm and influences reproductive hormone secretion (including timing of puberty and cycle regularity) |

| <b>Ovaries</b><br><i>Located in the pelvis, on either side of the uterus</i> |                                                                                                                         |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Estrogen (mainly estradiol, E2)                                              | Drives development of female secondary sex characteristics, endometrial growth, mood, skin, libido, and bone health     |
| Progesterone                                                                 | Prepares uterine lining for implantation, supports early pregnancy, calms the nervous system, modulates immune response |
| Testosterone                                                                 | Supports libido, bone density, muscle mass, motivation, and mood (yes—ovaries make this too!)                           |
| Inhibin A & B                                                                | Inhibit FSH release; help regulate follicle development and menstrual cycle timing                                      |
| Anti-Müllerian hormone (AMH)                                                 | Reflects ovarian reserve; produced by small growing follicles                                                           |

| <b>Adrenal Glands</b><br><i>Located at the top of each kidney</i> |                                                                                                                                   |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Cortisol                                                          | Regulates stress response, blood sugar, metabolism, and inflammation; impacts cycle regularity and ovulation under chronic stress |
| DHEA/DHEA-S                                                       | Precursor to sex hormones (especially androgens); supports mood, libido, and energy                                               |
| Adrenaline and noradrenaline (epinephrine/norepinephrine)         | Acute stress response; affect glucose mobilization and blood flow                                                                 |
| Aldosterone                                                       | Regulates sodium/potassium balance and blood pressure—can shift with hormone transitions (e.g., PMS, menopause)                   |

| <b>Thyroid Gland</b><br><i>Located in the front of your neck</i> |                                                                                                                          |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Thyroxine (T4) and triiodothyronine (T3)                         | Regulate metabolism, energy, temperature, digestion, and influence menstrual regularity, fertility, and ovarian function |
| Calcitonin                                                       | Helps regulate calcium levels (less central to reproductive hormone health, but worth noting)                            |

| <b>Placenta</b><br><i>Located in the upper part of the uterus (during pregnancy)</i> |                                                                        |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Human chorionic gonadotropin (hCG)                                                   | Maintains corpus luteum and progesterone production in early pregnancy |
| Placental estrogen (mainly Estriol, E3) and progesterone                             | Support pregnancy, fetal development, and uterine growth               |
| Human placental lactogen (hPL)                                                       | Modulates maternal metabolism to support fetal nutrition               |

| <b>Adipose Tissue, Skin, and Peripheral Tissues</b><br><i>Located all throughout the body</i> |                                                                                                |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Estrone (E1)                                                                                  | Weaker estrogen, mainly produced in fat tissue post-menopause, still influences bones and mood |
| Leptin                                                                                        | Signals energy availability; influences GnRH and fertility (low levels = disrupted cycles)     |

| <b>Pancreas</b><br><i>Located in the upper abdomen, behind the stomach</i> |                                                                                                   |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Insulin                                                                    | Enables glucose uptake into cells; supports blood sugar balance, ovulation, and hormone signaling |
| Glucagon                                                                   | Opposes insulin; raises blood sugar levels between meals and helps maintain energy homeostasis    |

| <b>Liver</b><br><i>Located in the upper right abdomen, beneath the diaphragm</i> |                                                                                                       |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Sex hormone-binding globulin (SHBG)                                              | Binds estrogen and testosterone; regulates their bioavailability and balance                          |
| Thyroxine-binding globulin (TBG)                                                 | Transports thyroid hormones (T4 and T3) in the bloodstream; maintains thyroid hormone stability       |
| Insulin-like growth factor-1 (IGF-1)                                             | Mediates growth hormone effects; supports cell growth, metabolism, and ovarian function               |
| Angiotensinogen                                                                  | Precursor to angiotensin; critical for blood pressure regulation and fluid balance                    |
| Hepcidin                                                                         | Master regulator of iron metabolism; controls absorption and distribution of iron throughout the body |

## Welcome to the Hormone Group Chat

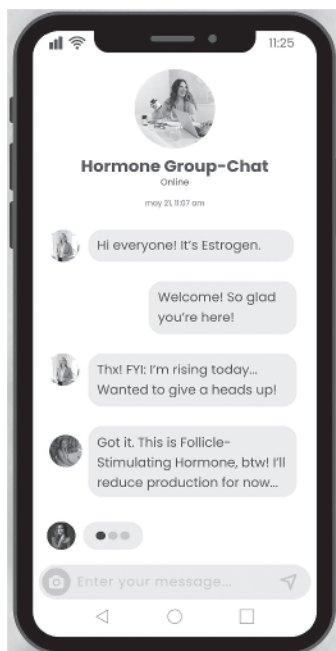
Your hormones are constantly talking to one another and to various parts of the body. Think of it like a group chat between your brain, your hormone-producing glands (like the thyroid, ovaries, and adrenals), and the organs they send signals to (like the liver, pancreas, and muscles), which can also talk back and carry out functions.

Chemical messages (aka hormones) are sent out, received, and responded to—with new messages sent back in real time based on what's happening. In medicine, we call these *feedback loops*.

For example:

- When estrogen levels rise during your cycle, they send a signal to the hypothalamus and pituitary glands to reduce follicle-stimulating hormone (FSH).
- But right before ovulation, estrogen gets so high it flips the switch and triggers a surge of Luteinizing hormone (LH).

- When stress hormones like cortisol spike up, they suppress reproductive hormone signals.
- If the hormones produced by your thyroid are low, your brain increases thyroid-stimulating hormone (TSH) to stimulate the thyroid to produce more—until the levels are back in balance.



Every moment of your life, there's an invisible conversation happening inside your body.

This is your body's internal feedback loops, or checks-and-balances system. It keeps your hormones within just the right range—not too much, not too little, just right—based on what's needed in the moment. Or at least, that's what is *supposed* to happen. Sometimes, the group chat goes haywire.

Often, by the time a woman comes into my clinic, the communication breakdown has been happening for a long time. Years. Maybe decades.

Optimal communication can be restored, but it takes time. The following section explains what this looked like for one client, Helene.

### ***Our Bodies Keep Score***

Helene was 43 when she came to see me. She was experiencing textbook perimenopausal shifts: hot flashes, night sweats, hair loss, low libido, feeling blue and anxious, weight gain, and heavy bleeding.

Her labs told a fuller story: early-stage type 2 diabetes, iron-deficiency anemia, and late-stage perimenopause (happening earlier than most). A mammogram revealed a suspicious mass. An ultrasound showed a 7 cm uterine fibroid. Her doctor had put her on birth control in her teens to regulate her cycle, and she stayed on it until her early 30s, when she stopped to conceive in her mid-30s. After childbirth, no one revisited her hormone health again, even though the same irregular periods returned.

On paper, Helene looked like she had been doing all the right things. She ate balanced meals and exercised consistently. But she had a love of wine, sugary snacks, and treats, and carried the chronic stress of a high-profile job. Like many women, her thinking was, “If I’m still able to work and carry out my daily responsibilities, if I’m not in a full-blown crisis, then everything is fine.”

But everything was not fine. And Helene noticed that she felt increasingly worse. She thought hormone replacement therapy (HRT), also known as menopausal hormone therapy (MHT), might be her magic fix, the thing that would finally make everything click back into place. But by the time she came to me, she was already living with metabolic syndrome, elevated cancer risk, and likely irreversible hair loss. It didn’t happen overnight. It was decades in the making. The hormonal highways in her body had been disrupted for a long time, and now, in her 40s, she was *really* feeling it.

Undoing is harder than prevention. And our bodies keep score.

Running tests on Helene helped us pinpoint what was out of whack, so we could develop a wellness plan to bring her back into balance. By carrying out the plan and testing several times over many months, we could see her hormone levels change and return to optimal ranges. This provided proof that the plan was working, and Helene could see and feel the difference. She had a feeling of internal control and motivation to keep going.

***When Women Understand How Their Bodies Work, They Can Become Leaders Rather Than Passive Participants in Their Lives***

If you are reading this book later in life, know that it is never too late to get educated about your hormones: the sacred messengers of the body.

It is never too late to nudge the nose of the airplane a few degrees to the right or left and get your life moving in the direction you want.

It is never too late to create optimal health.

As the proverb goes, “The best time to plant a tree was 10 years ago. The second best time is now.”

In your 30s, 40s, and 50s, you still have a great deal of life ahead of you. The years ahead should feel incredible, not painful, and not just tolerable. Your time is now.

## **Key Takeaways**

- Hormones are messengers—chemical signals that travel through your bloodstream and lymph fluid, delivering instructions to keep everything in your body running smoothly.
- Your body produces more than 50 hormones. Each one performs important tasks in your body. Estrogen, progesterone, testosterone, cortisol, and melatonin are the top five to remember. T3 and T4 (both produced by your thyroid) are two other hormones that every woman should know.

- There's constant communication happening between your brain, your hormone-producing glands, and the organs they signal, which also respond—creating a feedback loop.
- Sometimes, due to stress, nutrient deficiencies, and other factors, communication channels can be disrupted.
- When hormone levels are too high or too low or when there's a communication breakdown, this leads to uncomfortable symptoms. Symptoms are your body's way of saying, "Something is off. Please help!"
- Although hormones affect everything from metabolism to bone density to sleep cycles and beyond, they are deeply misunderstood, even by many medical professionals.
- Closing the knowledge gap will take time. When women (like you) get educated about their own bodies, this accelerates progress. Change starts with *you*.

## Notes

1. "Closing the Women's Health Gap: A \$1 Trillion Opportunity to Improve Lives and Economies." World Economic Forum. 2024. <https://www.weforum.org/publications/closing-the-women-s-health-gap-a-1-trillion-opportunity-to-improve-lives-and-economies/>.
2. "Closing the Women's Health Gap: A \$1 Trillion Opportunity to Improve Lives and Economies." McKinsey Health Institute. World Economic Forum. 2024. <https://www.weforum.org/publications/closing-the-women-s-health-gap-a-1-trillion-opportunity-to-improve-lives-and-economies/>.
3. Dusenbery, M. *Doing harm: The truth about how bad medicine and lazy science leave women dismissed, misdiagnosed, and sick*. Harper-Collins, 2018.

4. “What Is the Gender Health Gap?”. *Evvy*. Cassano, Olivia. Updated 29 December 2025. Available from: <https://www.evvy.com/blog/gender-health-gap>.
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