

2ND
EDITION
FULLY REVISED
& UPDATED

PERIOD REPAIR MANUAL

NATURAL TREATMENT FOR BETTER
HORMONES AND BETTER PERIODS

LARA BRIDEN ND

Foreword by Professor Jerilynn Prior

Period Repair Manual

**Natural Treatment for Better Hormones and
Better Periods**

second edition

Lara Briden, ND

DISCLAIMER

The information contained in this book is intended to help readers make informed decisions about their health. It is not a substitute for medical treatment by a professional healthcare provider. If you have a medical problem or need medical advice, please see your doctor.

The names and details of some individuals have been changed.

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For further information visit the author's website at

<http://www.larabriden.com>

to my patients

Contents

[Copyright](#)

[Dedication](#)

[Contents](#)

[Foreword](#)

[Introduction](#)

[How to Use This Book](#)

[My Education and Background](#)

[Part One: Understanding Your Period](#)

[Chapter 1: Period Revolution](#)

[Your Period Is Trying to Tell You Something](#)

[Why Hormonal Birth Control Is Not the Answer](#)

[Be a Detective](#)

[Don't Wait Too Long](#)

[Chapter 2: Breaking Up with Hormonal Birth Control](#)

[Not the Only Birth Control](#)

[Pill Bleeds Are Not Periods](#)

[Pill Drugs Are Not Real Hormones](#)

[Different Types of Hormonal Contraception](#)

[Risks and Side Effects of Hormonal Birth Control](#)

[Coming Off the Pill](#)

[Chapter 3: Better Birth Control. All the Options](#)

[Fertility Awareness Method or FAM](#)

[Male Condoms](#)

[Female Condoms](#)

[Diaphragm Without Spermicide](#)

[Cervical Cap Without Spermicide](#)

[Withdrawal or Pull-Out Method](#)

[Copper Intrauterine Device \(IUD\)](#)

[Hormonal Intrauterine Device \(Mirena IUD\)](#)

[Spermicide](#)

[Female Tubal Ligation](#)

[Vasectomy](#)

[Vasalgel](#)

[Chapter 4: What Should Your Period Be Like?](#)

[Follicular Phase and Estrogen](#)

[Ovulation](#)

[Luteal Phase and the Rise of Progesterone](#)

[The Grand Finale: Your Period](#)

[Menstrual Products](#)
[Periods Over All of Your Lifetime](#)

[Chapter 5: What Can Go Wrong with Your Period? Looking for Clues](#)

[Do You Ovulate?](#)
[No Periods or Irregular Periods](#)
[Late Periods](#)
[Early Periods](#)
[Heavy Periods or Heavy Menstrual Bleeding](#)
[Light Periods](#)
[Pain](#)
[Abnormal Vaginal Discharge or Cervical Fluid](#)
[Bleeding Between Periods](#)
[Premenstrual Symptoms](#)
[Your Period Report Card](#)

[Part Two: Treatment](#)

[Chapter 6: General Maintenance for Periods](#)

[Stress](#)
[Sleep](#)
[Exercise](#)
[Chronic Inflammation](#)
[Anti-Inflammatory Diet](#)
[Macronutrients for Period Health](#)
[Micronutrients for Period Health](#)
[The Best Diet](#)

[Chapter 7: Restoring Regular Periods](#)

[Why Does It Matter?](#)
[How Regular Do You Need to Be?](#)
[Working Toward a Diagnosis](#)
[Polycystic Ovarian Syndrome \(PCOS\)](#)
[Treatment of Acne](#)
[Treatment of Female Pattern Hair Loss](#)
[Anti-Androgen Treatments](#)
[Hypothalamic Amenorrhea \(HA\)](#)
[High Prolactin](#)

[Chapter 8: The PMS Solution: 3 Steps to Hormonal Resilience](#)

[A Controversial Diagnosis](#)
[What Causes PMS?](#)
[Enhance Progesterone and GABA](#)
[Stabilize and Metabolize Estrogen](#)
[Reduce Inflammation](#)
[PMS with Depression and Anxiety](#)
[PMS with Breast Pain](#)
[PMS with Acne](#)
[PMS with Migraines or Headaches](#)
[PMS with Fatigue](#)
[PMS with Sugar Cravings](#)

[Chapter 9: Easy Flow: No More Pain and Suffering](#)

[Heavy Menstrual Bleeding or Heavy Periods](#)

[Light Periods](#)

[Uterine Fibroids](#)

[Adenomyosis](#)

[Endometriosis](#)

[Period Pain](#)

[Bleeding Between Periods](#)

[Ovarian Cysts](#)

[Chapter 10: What Happens in Your 40s](#)

[Estrogen Goes on a Roller Coaster Ride](#)

[Progesterone Becomes Seriously Deficient](#)

[Perimenopausal Mood, Sleep, and Hot Flashes](#)

[Is It Perimenopause or Thyroid or Both?](#)

[The Heavy Menstrual Bleeding of Perimenopause](#)

[Life After Periods](#)

[Bioidentical Hormone Therapy](#)

[Chapter 11: Advanced Troubleshooting](#)

[Putting It All Together](#)

[Environmental Toxins](#)

[Digestive Health](#)

[Yeast Infections and Bacterial Vaginosis](#)

[Thyroid Disease](#)

[Hair Loss](#)

[How to Come Off Hormonal Birth Control](#)

[How to Talk to Your Doctor](#)

[How Long Will It Take to See Results?](#)

[A Final Message: Trust Your Body](#)

[Appendix A: Resources](#)

[Appendix B: Glossary](#)

[References](#)

[Acknowledgments](#)

[Index](#)

Foreword

By Jerilynn C. Prior MD, Endocrinology Professor

Having worked as a clinician and scientist of women's reproductive and bone health for over 40 years, I am convinced that women's self-knowledge is empowering and healing. Let me explain why I say that.

Years ago I found that half of healthy women who had abnormal menstrual cycles or ovulation recovered to perfect cycles by the end of a one-year therapy study. At baseline, these 61 normal-weight, otherwise healthy women in their 20s and 30s had absent or far apart periods or regular cycles without egg release or with repeated short post-egg release phases related, not to a disease, but to combinations of very personal stressors. Their recovery couldn't be accounted for by the cyclic progesterone or calcium supplementation or placebo we gave during this randomized, blinded trial or to weight gain or less exercise. Therefore, these women's perfectly normal menstrual cycles and ovulation, by the end of the study, were likely due to the process of learning more about themselves required by this trial and the supportive environment of a participatory, scientific study.

Self-knowledge means awareness. For example, I know I am more critical of myself than some, and more ambitious than others. Self-knowledge also means "body literacy," my educator-reporter friend Laura Wershler's term. This body literacy means appreciating, based on solid personal evidence, that my luteal phase will be short if I hike for seven days from sea-level up and over the alpine on the Chilkoot trail carrying a 65-pound pack with a companion who is not simpatico. It also means knowing that this same combination of emotional, exertional and nutritional stressors a decade earlier would have made my period go away. Lara Briden ND's book will help you attain such empowering body literacy.

My first thoughts seeing the title and before reading it, were that it would treat women's reproductive system as a rigid, inflexible machine that requires fixing by a greasy-handed, muscle-bound mechanic. I was concerned because an engine-related concept doesn't fit with my understanding of how integrative, adaptable and self-healing our

reproductive system is—if given a chance. My second thought was that this book would be full of orders to do this or avoid that inexplicable thing.

I was wrong. On reading this latest edition, I find that naturopathic physician, Lara Briden, shows great respect for the complexity and integrative powers of women's reproductive system. Furthermore, she takes an amazingly physiological and scientific approach to most aspects of women's menstrual cycles and their variations. She usually does a good job of explaining mysterious things and provides many and up-to-date medical journal references. I especially like that she identifies where the data are few, where medical doctors and naturopaths are likely to disagree. Even better, she prepares women to speak with their physicians from a position of self-awareness, careful observation, and record-keeping while feeling strong self-advocates.

For women everywhere, this book is an appealing, personable and empowering introduction to understanding yourself.

Jerilynn C. Prior, professor of endocrinology at the University of British Columbia, founder and scientific director of the Centre for Menstrual Cycle and Ovulation Research (www.cemcor.ca), director of the British Columbia Centre of the Canadian Multicentre Osteoporosis Study (www.camos.org) and author of the award-winning educational fiction book *Estrogen's Storm Season—stories of perimenopause* (second edition, 2017).

Introduction

Welcome to the second edition of *Period Repair Manual*. I'm excited to bring you new and updated information about how to have better hormones and better periods.

With this book, I'm even more passionate about period health than I was three years ago with the first edition. Why? Because the book is now part of a collective revolution in women's health. Mine is just one voice in a growing chorus of women's voices who are speaking up about periods and are reclaiming hormones and periods as an *essential, integrated part of human health*.

Women's health is not a niche topic. It is general health for half the humans on earth.

For too long, women's hormones have been thrown in the "too-hard basket" and managed with birth control. Now, I invite you to think differently about your hormones. I invite you to see them as a *force for good* that benefits every aspect of your mood and metabolism and physiology.

This book is my message to you that you are lucky to be in a female body and have female hormones. It's my assurance that your body is not complicated or mysterious or unruly. Quite the opposite. Your woman's body is strong and vital and wise, and with the right support, it knows exactly how to be healthy and have periods.

How to Use This Book

The first half of the book is all about understanding your period. For example: Why do we have periods at all? What should your period be like? What can go wrong? In this section, I also make the case against hormonal birth control and survey alternative methods of contraception.

The second half is the treatment section. It begins with a chapter called *General Maintenance*, which I strongly recommend you read. General maintenance is all the different things you can do to soothe, cool, and

nourish your hormonal system. Chapter 6 lays the groundwork for the treatment chapters that come later.

Please start by reading the book cover to cover because there are important topics nestled into each chapter. For example, Chapter 3 explains the [Physical Signs of Ovulation](#), which will come in handy when you're thinking about ovulation later in the book. Chapter 5 describes *estrogen metabolism* or detoxification, and Chapter 6 is where you'll first learn about *insulin resistance*. Those are important topics for understanding almost any period problem.

Special boxes

Throughout the book, you'll see definitions, tips, patient stories, and special topics.



definition

Definition boxes provide simple explanations for any technical words. You can also find them in the [Glossary](#).



Tips are extra bits of information you may find helpful.



Lara: Naturopathic doctor on a quest for truth

Patient stories are stories from my real patients with names and some details changed.

Special Topic: Explore in More Detail

Special topics provide you with extra, in-depth information.

The final chapter is the Advanced Troubleshooting chapter, where I dive into some of the trickier health issues such as environmental toxins, digestive health, and thyroid disease. The final chapter is also where you'll find the crucial section [How to Talk to Your Doctor](#). It provides a list of questions and statements to help you communicate with your doctor and hopefully bring you both to a better understanding of your particular health situation.

As you read, you will encounter references to different sections of the book. That will allow you to go back and piece together the different parts of your unique period story. For example, you may be struggling to get your period back after stopping the birth control pill. I explore that problem in special sections in Chapters 2, 7, and 11.

Please use the Table of Contents and Index to navigate to the right sections.

Are the Recommendations Evidence-Based?

Whenever possible, I have provided a reference to a scientific study. That amounts to more than 350 studies to back up many of the recommendations.

When I have not provided a reference, it's because there is not yet any research on that topic. That's the case for some of the herbal medicines and also for some of the dietary recommendations such as *no dairy*. Of course, I hope that scientists will one day look at testing those treatments, but in the meantime, I want you to have the benefit of them. If that means being ahead of the curve of scientific inquiry, then so be it. One of my earliest naturopathic teachers put it this way:

“If you wait for the research, then you could be waiting for a very long time.”

All the recommendations (referenced or not) are based on results I've seen with my thousands of patients over the last twenty years. And all the recommendations are simple and safe to try.

What's New in the Second Edition?

The best thing about releasing the first edition of *Period Repair Manual* was all the thoughtful feedback I received. So many questions and

suggestions of how to make it better. Using that feedback, I expanded and revised the entire book, including the sections on fertility awareness method, natural progesterone, PCOS, and endometriosis.

I also gathered some of the latest research in nutrition and women's health.

What's new?

- Insights from Jerilynn C. Prior MD, Endocrinology Professor.
- More than 300 additional references.
- Expanded sections on PCOS and endometriosis.
- A chapter on perimenopause and the menopause transition.
- Patient stories.
- Special topics such as *Histamine Intolerance* and *How to Choose a Probiotic*.
- Suggested brands for supplements.

And just a word about the suggested brands. They're listed in the Resources section, and they're to provide you with a starting place. They're by no means the only acceptable brands, as there are plenty of other good products out there. Please buy the supplement that is available to you and is not too expensive. I have not been paid to mention any product or brand name.

My Education and Background

I started as a biologist at the University of Calgary. There, I studied zoology, botany, and ecology, and worked summers collecting data on the plants and animals of the Canadian wilderness. I even published a scientific paper on the foraging behavior of male and female bats.

I was planning to pursue an academic career in biology, when one day, I saw an ad in the university newspaper, and my life took a different direction.

The ad was for the Canadian College of Naturopathic Medicine, and I was intrigued. I cut it out of the paper and taped it to my dresser mirror. "What is naturopathic medicine?" I wondered. Until that point, medicine was not something I had seriously considered because I had not been interested in working within conventional medicine.

When I started to look into naturopathic medicine, I discovered that its core philosophy is that the body can heal itself. That resonated with everything I'd learned about the natural world in my biology studies. I understood the natural world to be a pragmatic and regenerative system. Of course, the human body had to follow the same principles because the human body is part of the natural world.

I dropped my plans for an academic career and applied to the naturopathic college. Once accepted, I drove my little old Volkswagen three thousand kilometers east across Canada to Toronto and embarked on four more years of study.

There are currently seven accredited colleges of naturopathic medicine in North America: two in Canada and five in the United States. The first two years of naturopathic college are similar to conventional medical programs. The final two years provide hundreds of hours of training in nutritional and herbal medicine, as well as clinical training in an outpatient clinic. Graduates of accredited naturopathic colleges must complete a postdoctoral licensing exam (NPLEX).

I qualified as a naturopathic doctor in 1997 (under my maiden name, Lara Grinevitch), and promptly set up general practice in the small rural town where I'd grown up (Pincher Creek, Alberta, Canada). That was the 1990s and an interesting time to be a natural doctor. Even basic things like probiotics were a strange idea to the other doctors. "Good bacteria?" said one doctor. "How ridiculous!"

The 1990s was a particularly interesting (and somewhat scary) time for women's health. Women were faced with high-dose birth control pills, conventional hormone "replacement" therapy (Premarin), and routine hysterectomies. I simply had to find better solutions for those women.

As I worked with my patients, I discovered that natural treatments worked even better than I had been taught to expect. I discovered that for most women, natural medicine is a viable alternative to synthetic hormones and surgery.

One condition I treated in those early years was polycystic ovarian syndrome (PCOS). Back then, the conventional treatment was a surgical procedure called ovarian drilling. My approach was completely different. I had been taught that PCOS was related to an underlying problem with blood sugar and insulin, so I prescribed diet and supplements to lower insulin. A "diet solution" for PCOS was greeted with skepticism by the

local doctors, even by a doctor I was dating at the time, but I persevered and saw great results. Of course, we now know that blood sugar and insulin *are* major factors in polycystic ovarian syndrome (PCOS)(see Chapter 7).

More than two decades later, I've had the opportunity to treat many, many kinds of period problems. I run a busy natural hormone clinic in Sydney, Australia, where patients consult me for help with period problems, endometriosis, polycystic ovarian syndrome, insulin resistance, thyroid disease, and many other issues.

And to my thousands of patients over the years, I just want to say thank you!

I dedicate this book to you.

Lara Briden

September 2017

Christchurch, New Zealand

PART ONE



Understanding Your Period

Nothing in life is to be feared, it is only to be understood.
Now is the time to understand more, so that we may fear less.

~ Marie Curie ~

Chapter 1



Period Revolution

Something big is happening in period health. If you've picked up this book, then you're part of the movement.

Periods are coming out into the open. They are no longer something to be endured, concealed, or regulated with hormonal birth control. As we'll see in the coming chapters, the pill has outlived its usefulness. There are better options for birth control. There are far better solutions for period problems.

More and more women are saying *No* to the pill, and *Yes*, to their own natural monthly cycles.

Period apps are part of the change. Most of my patients use period apps. I use one myself. When I asked my teenage stepdaughter if she uses a period app, she said "Of course," as if I'd asked a silly question.

Period apps are smartphone applications that allow you to track data about your monthly cycle. You can track your period start date. You can track signs and symptoms such as spotting, breast tenderness, and mood. Of course, you could do the same thing with old-fashioned pen and paper, but a period app is easier and *friendlier* somehow. Your phone is right there in your purse. It's often in your hand.

By inviting our periods into our day-to-day lives, period apps make periods seem less threatening. They make periods seem *normal*, which of course they are, and always have been.

What's happening with *your* period? Does it come every month? Does it come at all? Is it heavy or painful or difficult in some way? Maybe you've just come off the pill, or are thinking about coming off the pill.

No matter your age or your situation, it's time to get to know your period. There is no better time to do so.

Your Period Is Trying to Tell You Something

Your period is not just your period. It is an expression of your underlying health. When you are healthy, your menstrual cycle will arrive smoothly, regularly, and without undesirable symptoms. When you are unhealthy in some way, your cycle will tell the story.

I invite you to think of your period as your monthly report card. Every month, it can offer a helpful account of what is happening with your *health*

in general. That information is incredibly valuable. How better to know what you need to do—and what you need to change?

The American College of Obstetricians and Gynecologists (ACOG) agrees. In December 2015, together with the American Academy of Pediatrics, they quietly issued a groundbreaking statement called “Menstruation in Girls and Adolescents: Using the Menstrual Cycle as a Vital Sign” [\[1\]](#).

In it, they state:

“Identification of abnormal menstrual patterns in adolescence may improve early identification of potential health concerns for adulthood. It is important for clinicians to have an understanding of the menstrual patterns of adolescent girls, the ability to differentiate between normal and abnormal menstruation, and the skill to know how to evaluate the adolescent girl patient. By including an evaluation of the menstrual cycle as an additional vital sign, clinicians reinforce its importance in assessing overall health status for patients and caretakers.”

The ACOG says doctors should always ask patients about menstruation and should advise girls to chart their cycles. By doing so, doctors will demonstrate to patients that menstruation is an important reflection of their overall health.

I nearly cried when I read that statement. Finally!

The ACOG is correct, of course. Menstruation is a reflection of overall health, or what they are calling a *vital sign*.

Through all my twenty years of working with patients, I have relied on information about menstruation to help me assess health and determine the correct treatment plan. That’s why I always ask my patients about their periods—even if they have come to me for something else.

Consider my patient Meagan.



Meagan: How is your period?

Meagan was 26 when she came for help with psoriasis, an immune disorder which causes dry, scaly skin patches. Her psoriasis

affected her scalp and elbows and seemed to get worse with stress. Meagan said she'd inherited it from her father.

I asked Meagan a few more questions. When had it started? (When she was 13.) Did she have any allergies? (No.) Did she have any digestive problems? (No.)

Then I asked, "How is your period?"

"What do you mean?"

"Does it come every month? Do you have any pain or spotting between periods?"

Meagan said her period was fine because she took the pill.

"That's not a period," I said. "I mean, what was your period like back when you weren't on the pill?"

Meagan's period had not started until she was 16 and then it was light and irregular. Her doctor had done some blood tests and said that everything was normal. She'd recommended Meagan take the pill.

"There had to be a reason for your irregular periods," I explained. "And it could be the same underlying issue that's contributing to your psoriasis."

I ordered some extra blood tests, and all was normal except for a borderline iron deficiency, which had also come up in some of Meagan's previous tests.

A picture was starting to emerge. Meagan had a group of symptoms which suggested to me a possible sensitivity to wheat: 1) psoriasis, 2) iron deficiency, and 3) irregular periods. I explained to Meagan that the inflammation from gluten could potentially lead to both psoriasis ^[2] and period problems ^[3], specifically light and irregular periods.

Fortunately, Meagan tested negative for the most severe clinical form of gluten sensitivity which is called celiac disease. But I perceived that Meagan likely had a milder form of gluten sensitivity—one that was affecting her skin and her periods. I asked her to avoid gluten for six months.

A month into treatment, Meagan stopped the pill to see if her periods would improve. I warned her that it could take some time.

For the first two months, not much happened. Meagan's psoriasis stayed about the same, and she did not get a period.

"Recovering from gluten can take several months," I said.

Finally, after three months, her skin started to improve. After six months, she got her first period and went on to have the first regular periods she

had ever seen.

The right treatment for Meagan's general health was also the right treatment for her periods. It is always like this. Fix your health, and you will fix your period.

Why Hormonal Birth Control Is Not the Answer

Your doctor may not care very much about your monthly report card. She's not thinking about which subtle underlying issue is the cause of your period problems because the solution is always the same: Take the pill.

The pill is a combined oral contraceptive, which is one of the types of hormonal birth control that suppress ovulation.



hormonal birth control

Hormonal birth control is the general term for all tablets, patches, and injections that deliver steroid drugs to suppress ovarian function. The *pill* is the most popular type.

Why does your doctor love the pill so much? She loves it because it is a tidy (but flawed) catch-all solution. Missing periods? Take the pill. Period pain? Take the pill. Polycystic ovarian syndrome or endometriosis? Take the pill.

Then, when you want to become pregnant, you can take a fertility drug. Conventional medical prescribing for period problems looks like this:

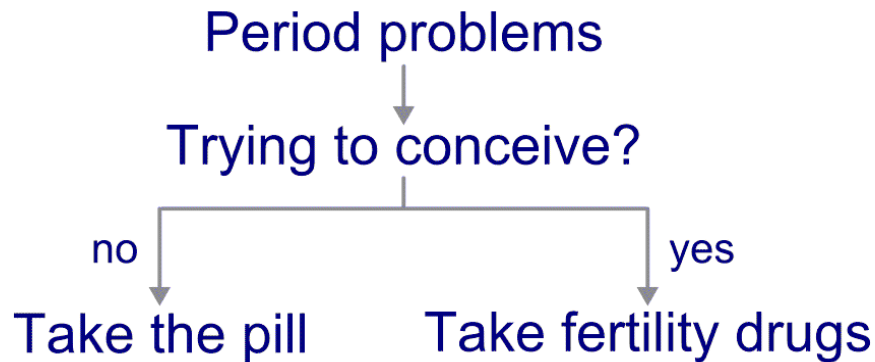


image 1 - conventional prescribing for period problems

I'll grant you: The pill can be a predictable band-aid solution. It suppresses skin oils, so it clears up pimples. It overrides hormones, so it erases pesky report card symptoms—but only as long as you keep taking it. Stopping the pill can be tricky, as we'll see in the next chapter.

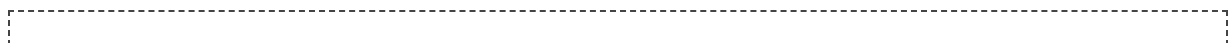
Finally, the pill forces you to have a bleed, which is reassuring for both you and your doctor. But there's a problem: **A pill bleed is not a real period.**

A real period is a finale in a series of hormonal events which include ovulation and the making of progesterone (discussed below). A real period happens approximately every 28 days because that's how long it takes your ovaries to do that. A real period is about the healthy functioning of your ovaries.

A pill bleed does not proceed from ovulation. Instead, it is a withdrawal bleed from the drugs that stimulate your uterine lining but *shut down your ovaries*. A pill bleed is about the dosing of a drug.

Wait a minute. Did I just say that hormonal birth control works by shutting down your ovaries and switching off your hormones? Yes. On the pill, you have no sex hormones of your own. Instead, you have steroid drugs given to you as a kind of "hormone replacement"—not unlike the hormone replacement that is given to women in menopause.

Hormone replacement might be okay if the steroid drugs were as good as your own hormones, but they're not. The steroid drugs in hormonal birth control *are not the same* as your own estrogen and progesterone, and as we'll see in the next chapter, that can pose a big problem for health.





The pill does not regulate hormones. It switches them off entirely.

This book is your opportunity to depart from “pill medicine” and to do things differently.

Natural period repair is different from pill medicine because it’s gentle and without side effects. It’s also a fundamentally different approach in that it works by supporting your ovaries—not suppressing them. Natural period repair honors your period as the vital sign the College of Gynecologists says it is.

The best thing about natural period repair is that when it works, it works forever. Your period will stay healthy for as long as you remain healthy. In that way, it’s a far more powerful and permanent solution than the pill could ever be.

Be a Detective

So where do you start? What is the right treatment for your health and your periods? Is it something as simple as avoiding gluten, like for Meagan? Or is it something completely different?

To find your best treatment, you must first learn to interpret your period clues. This book is your step by step guide to doing that. First, we will look at how your period should be. Then, we will look at some of the things that can go wrong, and why. As we go, please start asking yourself questions, and start thinking about some possible answers. For example:

“Does your period come at least every 35 days?” If not, then you might have a condition called polycystic ovarian syndrome or PCOS, which we’ll discuss in Chapter 7. Or you might have a problem with your thyroid. PCOS and thyroid disease are just two of the many reasons for irregular periods.

“Is your period painful?” If so, then you need to think about inflammatory foods. You might need a magnesium supplement.

“Do you experience premenstrual breast pain?” Breast pain is so common that you probably do not consider it a sign of anything at all. Mild breast pain can be a normal sign of ovulation, but more severe breast pain can mean you don’t have enough iodine in your diet.

Those are fairly obvious questions. But here’s the most important question of all:

“Do you ovulate?”

When it comes to period health, it’s all about ovulation.

Ovulation is the release of an egg from your ovary. You probably understand that ovulation is essential for making a baby, but why does it matter so much for period health? Ovulation matters because it’s how you progress through all the menstrual cycle phases to your menstrual flow or period.

Ovulation is also how you make progesterone, which is an amazing hormone, to say the least.



progesterone

Progesterone is one of several steroid hormones made by the ovary. It’s essential for pregnancy but has many other beneficial functions.

Progesterone is a steroid reproductive hormone produced by a temporary gland in your ovary after ovulation. It’s beneficial for mood, metabolism, and bones. It’s also highly beneficial for your period. In fact, you could say, that when it comes to period health, it’s all about progesterone.

We’ll learn more about progesterone in the coming chapters, but suffice it to say at this point, you almost certainly want more progesterone than you have right now.

Special Topic: How Do You Know If You Ovulate and Make Progesterone?

Signs of *possible* ovulation include fertile mucus and a regular cycle. Evidence of *definite* ovulation includes a rise in basal body temperature and an increase in progesterone as measured by a mid-luteal phase blood test. A period itself is not evidence of ovulation because it is possible to have an anovulatory cycle. For more information, please see the [Physical Signs of Ovulation](#) section in Chapter 3 and [Progesterone Testing](#) in Chapter 5.



anovulatory cycle

An anovulatory cycle is a menstrual cycle in which ovulation did not occur, and progesterone was not made.

Interpreting your period clues is something you can do on your own, to some extent. After all, you know your own body better than anyone. At some stage, however, you may need to ask your doctor or healthcare provider for help. I want your conversation with your doctor to be as productive as possible—and not just result in another prescription for the pill. Toward that goal, I have included a section called [How to Talk to Your Doctor](#). You might find that your doctor is a lot more helpful than you'd expected—if you just know what to ask.

Don't Wait Too Long

Don't put off natural period repair. The longer you leave it, the more entrenched your period problems will become.

Hormonal patterns are like “hormonal rivers” in your body. In this analogy, your hormones flow down the gullies and trenches carved by the hormones that came before.

The Beginning of Periods

For example, when you first started having periods, estrogen was new to your body and hormone receptors.



hormone receptor

A hormone receptor is a docking station for hormones such as estrogen or progesterone. They exist in every type of cell and transmit hormonal messages deep into the cell.

At that young age, you reacted strongly to estrogen because your receptors were still quite sensitive. In the “hormonal river” analogy, estrogen had not yet had a chance to carve out its “river.” At the same young age, you were probably not yet ovulating or making the progesterone you needed to counterbalance estrogen. The result may have been the heavy periods of the early teen years.

With time, you reacted less strongly to estrogen because your hormone receptors became less sensitive. You, hopefully, also started to ovulate and make progesterone. The result was a natural lightening of your periods.

It takes time for hormones to carve out their “rivers,” and that’s why it takes time to establish a healthy menstrual cycle in the first place. According to Dr. Jerilynn C. Prior, a Canadian endocrinologist with expertise in reproductive hormones, it can take up to twelve years to develop a mature menstrual cycle with healthy regular ovulation and an optimal level of progesterone [\[4\]](#).

Twelve years to mature your menstrual cycle.

So, what happens if you take hormonal birth control as a teen and hit the “pause button” on that maturation process? You will probably need some time to get things going again, and you may not see regular periods right away when you first stop birth control.



Christine: One year to get periods

Christine had never thought much about her periods until she lost them at 29 when she came off the pill. Or rather, she perceived that she

lost them. In fact, she had not had a real period since before she started the pill at 14.

Back then, her periods were irregular, which is often the case at 14, but that's not how her doctor saw it. He prescribed the pill to "regulate" Christine's periods and said it would also give her nice skin, which it did. Christine had been on the pill for 15 years when she decided to take a break. She wasn't ready for a baby but thought she might try for one in a few years, and she wanted to see what was happening with her fertility. She stopped the pill, but much to her dismay, she saw no sign of a period. A few months went by, and then her doctor detected "polycystic ovaries" on a pelvic ultrasound exam. He said she might have a condition called polycystic ovarian syndrome (PCOS), which was very frightening for Christine.

I ordered some blood tests for Christine and, fortunately, they were all normal. I said that she probably did not have PCOS but that we would not know for sure until she had been off the pill for longer. As we'll see in Chapter 7, PCOS is a complex hormonal condition that cannot be diagnosed by ultrasound alone. It's fairly common to have polycystic ovaries after the pill. It just meant that Christine had not ovulated that month. It did not mean she would never ovulate again.

It had now been five months since Christine stopped the pill, and I thought it could be a few more until she got a period. I explained to Christine that she was in a phase of post-pill amenorrhea or "stalled menstruation" which can happen in women who started the pill at a very young age.

I was happy Christine didn't want a baby right away because I'd seen other patients in the same situation rushed into fertility treatment, which always made me sad.

I asked Christine to take the herbal medicine *Vitex agnus-castus*, which promotes communication between the pituitary and ovaries. Christine took one *Vitex* tablet per day for three months and then had a period.



amenorrhea

Amenorrhea means no menstruation or no periods.



polycystic ovarian syndrome (PCOS)

A common hormonal condition characterized by excess male hormones in women. Please see Chapter 7.

Getting Ready for the End of Periods

Your hormonal rivers determine how well you mature into a regular ovulatory menstrual pattern. They also determine how smoothly you transition to the end of your periods, or menopause.

If you're in your twenties or thirties, you may not be thinking much about the end of periods, but it's coming sooner than you think. The normal age for menopause is anywhere from 45 to 55. The normal age for perimenopause is up to ten or twelve years before that, so as young as 35!



perimenopause

Perimenopause means “around menopause,” and refers to the hormonal changes (such as increased estrogen and decreased progesterone) that occur during the two to twelve years before menopause. The final part of perimenopause is called the *menopause transition*.



menopause

Menopause means the cessation of menstruation. It's the life phase that begins one year after your last period [\[5\]](#).

During perimenopause, your cycles will still be regular, but you may start to experience symptoms like hot flashes, heavy periods, and insomnia. For more information, please read Chapter 10, which is all about the end of periods and the challenging time of perimenopause. I encourage you to read it even if you think it doesn't yet apply to you. It's a helpful preview of

what may be to come and will give you ways to help yourself when the time comes.

Going Forward

How are *your* hormonal rivers? Are your estrogen and progesterone flowing nicely? Or are your hormones not quite where you'd like them to be?

Your hormones now will determine your hormones of the future.

If you take hormonal birth control, now is the time to stop. You simply cannot go any further with your period health until you do. The pill distorts your hormonal rivers and masks your monthly report card.

And, as we'll see in the next chapter, the pill has more side effects than you may realize.

Chapter 2



Breaking Up with Hormonal Birth Control

We're in a strange time for women's health. A time when we think it's okay to routinely give a drug to switch off the hormones of millions of women and girls.

What are we doing? Why should we have to shut down a woman's entire hormonal system just to accomplish the simple job of preventing pregnancy? Fertility is an expression of health and not a disease to be treated with a drug.

Imagine if hormonal birth control were proposed today for the first time. Quite likely, most women, doctors, and scientists would be appalled. But that's seeing it from a modern perspective which values women and women's hormones. The pill is far from modern. It's a relic from the 1950s when people had different ideas about things. For example, they thought DDT was fine and normal. They thought smoking was fine and normal. And of course, they thought contraception should be illegal.

The invention of the pill helped to put an end to some of that antiquated thinking and gained women the legal right to birth control. That is something we can all celebrate.

But now it's 2017. We've progressed in so many other ways. Smartphones. Self-driving cars. Why are we still using such an outdated method of contraception?

If you think about it, fifty years of hormonal birth control shows a startling lack of imagination.

Not the Only Birth Control

It's not unusual for me to have a conversation with a patient that goes something like this:

Me: What do you do for birth control?

Patient: I don't use birth control. I use condoms.

In other words, for my patient, "birth control" is synonymous with the pill or other hormonal birth control. She thinks that if she's not using

hormonal birth control, then she is not using anything at all. And bizarrely, her doctor, who should know better, may have the same idea.

I'm here to tell you that you have other birth control options. In the next chapter, we'll take a fresh look at condoms, diaphragm, IUD, and fertility awareness method. Contrary to what you may have been told, those methods are a reliable and perfectly reasonable choice. That's true even if you're a young woman who has not yet had children. And that's true even if you're a teen.

Pill Bleeds Are Not Periods

What if you take birth control for a reason other than contraception? For example, what if you take it to control symptoms or to “regulate” your period? If you do, you're not alone. Of all the women who take the pill, one in three takes it to regulate her period.

Hormonal birth control can certainly suppress symptoms, but let's be clear: It cannot give you a period.

As we saw in the first chapter, pill bleeds are not periods. They do not equate, in any sense, to the cycling of your own hormones.

Pill bleeds are pharmaceutically induced bleeds which are arbitrarily coordinated into a 28-day pattern to reassure you that your body is doing something natural. Having the occasional pill bleed is necessary to prevent breakthrough bleeding, but it doesn't have to be monthly. A pill bleed could just as easily be every 56 days or every 83 days, or any number of days you'd like.

There is no medical reason to bleed monthly on hormonal birth control. So, why do it? It all started in the 1950s when the pill was invented. It was invented as contraception, but contraception was not yet legal, so instead, the pill was prescribed to ostensibly “treat female disorders” and to “regulate menstruation” ^[6]. “Regulate” was a quaint euphemism which just meant to get your period and to be “not pregnant” (wink-wink).

In other words, the whole “normalize periods” thing started as a cover story. That would be fine except we're six decades later and doctors have bought into the cover story as a weird counterfeit reality. Against all logic, they continue to prescribe birth control to “normalize” periods and “regulate” hormones, and they seem to actually believe that the pill's

steroids are somehow equal to, or better than, your own hormones. The fact is, nothing could be further from the truth.

Pill steroids are **not** better than your hormones. They're not even real hormones.

Pill Drugs Are Not Real Hormones

Your ovarian hormones are estradiol and progesterone. They have many benefits—not just for reproduction, but also for mood, bones, thyroid, muscles, and metabolism. They're *human hormones* that are essential for human physiology.

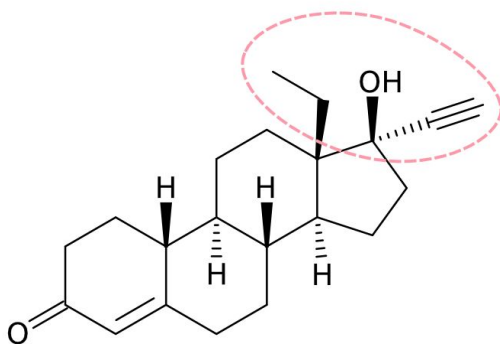
In contrast, the steroid drugs in hormonal birth control are ethinylestradiol, drospirenone, levonorgestrel, and others. Technically, they are hormones if a hormone is broadly defined as a chemical messenger. But they are **not** human hormones and are not part of normal human physiology. They are *pseudo-hormones*.



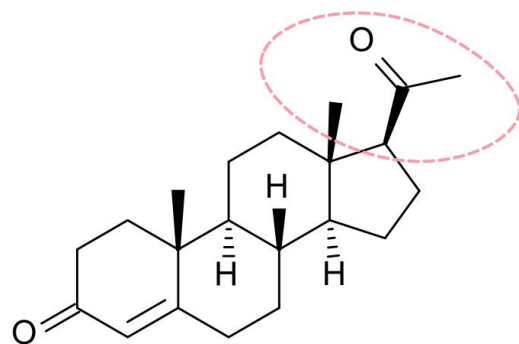
There's no progesterone in hormonal birth control.

One of the most common steroid drugs is levonorgestrel, which is used in many oral contraceptives and implants, as well as the Mirena IUD, and the morning-after pill.

Levonorgestrel is a progestin, which means it's *kind of similar* to progesterone.



levonorgestrel



progesterone

image 2 - levonorgestrel is not progesterone

When you look at levonorgestrel and progesterone side-by-side, you can see that they are, in fact, different molecules. Different molecules have different effects in the body.

Progesterone, for example, improves brain health and cognition [7]. Its counterpart, progestins, have been linked with depression and anxiety [8].

Another example is hair. Progesterone is great for hair and promotes hair growth. Its counterpart levonorgestrel causes hair loss because it's similar to the male hormone testosterone.

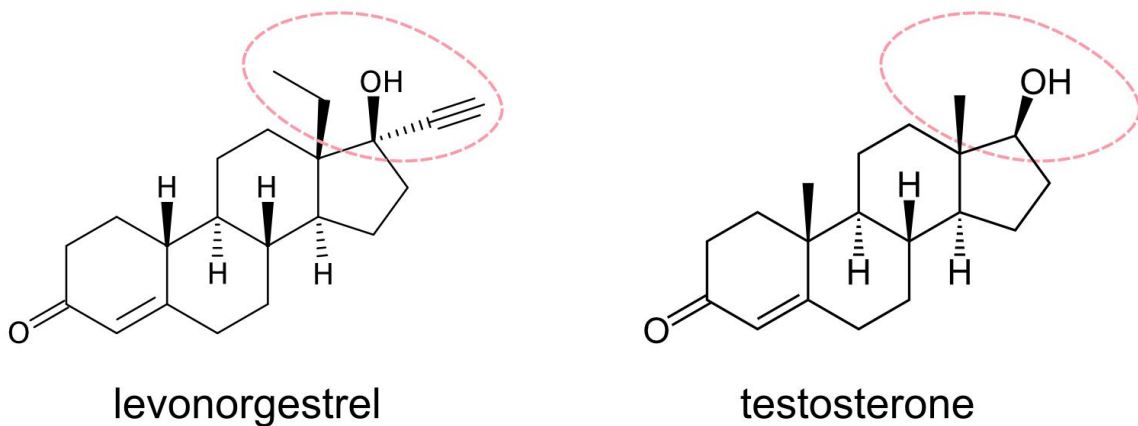


image 3 - levonorgestrel is almost testosterone

Levonorgestrel is actually more similar to testosterone than it is to progesterone.



progestin

Progestin is a general term for molecules that are similar to progesterone. Progestin drugs include levonorgestrel and drospirenone, which have some of the same effects as progesterone but also have many opposite effects. The terms progestin and progesterone **cannot** be used interchangeably.

Later in the chapter, we'll look at the many side effects of progestins. For now, let me say that their biggest side effect is that they rob you of your own beneficial progesterone. They do so by suppressing ovulation, which is, of course, their purpose, but unfortunately, without ovulation, you cannot make progesterone.

Special Topic: What's in a Word?

Some of my patients are reluctant to stop the pill, and I don't pressure them. I do, however, insist on one thing. I insist that we not use the word "period" when referring to their pill bleeds. Instead, we say "withdrawal-bleed" or "pill bleed."

The Pill Is Nothing Like Pregnancy

One of the arguments put forward in defense of hormonal birth control is that it's like pregnancy and that, therefore, any side effects are better than pregnancy (as if the pill or pregnancy were the only two options). Furthermore, the argument goes, the pill is "natural" because it mimics the continuously pregnant state of our ancestors.

That argument doesn't hold up.

For one thing, the pseudo-hormone drugs of hormonal birth control are **not** the hormones of pregnancy. Drugs such as ethinylestradiol, levonorgestrel, and drospirenone do not have the same effects as the pregnancy hormones hCG, estradiol, and progesterone.

And as for the "continuously pregnant state of your ancestors," it's a little more complicated than that. Yes, your great-grandmother may have had relatively few periods compared to you. If she had many children, then she had only forty periods in her life compared to your 400. Your hundreds of periods may put you at greater risk of fibroids and ovarian cysts, but then, *so does hormonal birth control*. And so does the modern onslaught of hormone-disrupting environmental toxins.

Any way you look at it, your health is going to be different from your great-grandmother's. And if 400 periods are the trade-off for living in the

modern world, then I invite you to embrace your periods. The best part is, with the right support, you can be happy and healthy with all of them.

Special Topic: Hormonal Birth Control Does Not Preserve Fertility

Your doctor may have told you that hormonal birth control can preserve fertility and delay menopause. It's not true. Your doctor is referring to the outdated notion that ovaries run out of eggs—a myth we'll debunk in Chapter 10. Quite simply, the pill *cannot* delay menopause. If anything, it can bring menopause earlier [\[9\]](#).

Is There Ever a Time to Take Hormonal Birth Control?

I would never say that no woman should ever take hormonal birth control.

My main goal is to speak the truth about what hormonal birth control is. Namely, that it shuts down hormones and functions as a type of synthetic hormone replacement.

Knowing this, there are two situations when you could consider taking hormonal birth control.

1. You understand the physiological reality of what the pill is. You are aware of your other options, but you still decide as a grown woman that hormonal birth control is the best method of contraception for you. Of course, that's fine. But in that case, you do not need this book. This is a book about periods and remember: Pill bleeds are not periods.
2. You suffer debilitating symptoms from a serious condition such as endometriosis or adenomyosis. We'll look at natural treatments for those conditions in Chapter 9, and they should work for you. If not, then you may need to resort to some type of hormonal birth control—preferably the Mirena IUD discussed below.

Different Types of Hormonal Contraception

Combined Pill (Estrogen plus Progestin)

The classic pill is a combination of two synthetic hormones: ethinylestradiol plus a progestin such as levonorgestrel. All combined pills are the same stuff, but they're branded differently according to the amount and timing of estrogen, and the type of progestin. Drug companies give them cutesy girl brand names such as Brenda and Yaz, so they'll seem more benign and personable. (You might take Yaz but would you be as happy to take a drug called drospirenone?) The brand names are different in different countries.

Readers always ask me about the pill Zoely which uses the natural estrogen estradiol instead of the usual synthetic ethinylestradiol. Yes, estradiol is better, and Zoely does have slightly fewer side effects and risks compared to other pills, but Zoely still shuts down ovulation and hormones just like other types of hormonal birth control. And Zoely still uses a progestin (norgestrel acetate) rather than natural progesterone. I don't see it as a great improvement.

NuvaRing (Estrogen plus Progestin)

NuvaRing is similar to the combined pill in that it delivers both ethinylestradiol and a progestin called etonogestrel. Just like the pill and most methods of hormonal birth control, it works by suppressing ovulation.

When NuvaRing was launched in 2001, it was touted as easier (because it's a monthly insert rather than a daily pill), and safer (because it's lower dose). The safety claim was extraordinary, given that a worrying blood clot risk had already emerged in the first clinical trials. The blood clot risk from NuvaRing is much higher than the pill because the ethinylestradiol goes directly into your blood without first passing through your liver. The high clot risk of NuvaRing was concealed by the manufacturer during the FDA approval process [\[10\]](#), and that concealment has subsequently been the target of several lawsuits.

Contraceptive Patch (Estrogen plus Progestin)

The patches Xulane and Evra are also similar to the combined pill in that they deliver both ethinylestradiol and a progestin called norelgestromin. Just like the pill and most methods of hormonal birth control, they work by suppressing ovulation. Just like Nuvaring, they carry a higher risk of blood clot compared to the pill [\[11\]](#).

Mini-Pill or Progestin-Only Pill

The word “mini” means that the pill contains one drug (a progestin), not two (ethinylestradiol plus a progestin). Also, the dose of the progestin is lower than it is in a combination pill because the mini-pill does not work primarily by suppressing ovulation. Instead, the progestin-only pill works by thinning the uterine lining and impairing cervical fluid. It does also inadvertently suppress ovulation in the majority of cycles [\[12\]](#).

The mini-pill still has many of the same side effects as the combined pill because progestins cause side effects. In fact, the first pill ever tested in 1956 was progestin-only [\[13\]](#). It had so many side effects that estrogen was then added to make the drug more tolerable.

Implants (Progestin-Only)

Arm implants are another type of progestin-only birth control. They contain either the progestin levonorgestrel (Jadelle or Norplant-2) or etonogestrel (Nexplanon or Implanon). Like the mini-pill, they work primarily by thinning the uterine lining and impairing cervical fluid. But like the mini-pill, they do also inadvertently suppress ovulation in the majority of cycles. Implants can cause weight gain and erratic bleeding, which is why many women ask to have them removed [\[14\]](#).

Special Topic: What's with All the Crazy Bleeding on Implants and Injections?

Progestin-only methods of birth control are known to cause “irregular menstruation,” which I would argue is a misnomer. Progestin bleeds are not real periods. Instead, they are anovulatory cycles or “breakthrough bleeds,” which occur when the uterine lining has been

exposed to estrogen, but not progesterone. Anovulatory cycles are also a feature of period problems such as polycystic ovarian syndrome (PCOS), which we'll discuss in Chapters 4, 5, and 7.

The breakthrough bleeds that occur on progestin-only birth control are different from other types of pill bleeds, which are withdrawal bleeds from the synthetic estrogen.

Injection (Progestin-Only)

The injection Depo-Provera delivers a high dose of the progestin medroxyprogesterone acetate, which completely suppresses both estrogen and progesterone. The profound hormone deficiency induced by Depo-Provera gives it the scariest side effects of any birth control. It can cause the troubling side effects of *unstoppable* weight gain [\[15\]](#) and temporary bone loss [\[16\]](#). It also carries a breast cancer risk [\[17\]](#).

Mirena and Skyla Intrauterine Devices (IUDs) (Progestin-Only)

Mirena and Skyla are intrauterine devices (IUDs) that release a small amount of the progestin levonorgestrel into the uterus. Like other progestin-only methods, they work primarily by thinning the uterine lining and impairing cervical fluid. Like other progestin-only methods, they do also inadvertently suppress ovulation—but not as often. The hormonal IUD suppresses ovulation in 85 percent of cycles in the first year, but then only 15 percent of cycles after that [\[18\]](#).

Because Mirena does not completely suppress ovulation, I view it as the least harmful of all hormonal birth control. That said, it is still the progestin drug levonorgestrel. The hormonal IUD has been linked with depression [\[19\]](#) and may reduce your ability to cope with stress [\[20\]](#).

On the plus side, Mirena has the benefit of reducing flow by 90 percent and so can treat serious period problems such as flooding, adenomyosis, and endometriosis (Chapter 9).

There is also a [non-hormonal type of IUD](#), which we'll look at in the next chapter.

Special Topic: Do You Need a Period?

Mirena stops periods in some women, which of course raises the question: “Do you even need a period?”

No, you don’t need a menstrual bleed *per se*, and you certainly don’t need a pill bleed, which is not a period anyway. But you do need ovarian hormones, and a menstrual cycle is the only way to make them.

Mirena is unique in that it suppresses a bleed but permits ovulation and hormones. So, if “menstrual suppression” is your goal, then Mirena is your only reasonable option.



With most hormonal birth control, you bleed but don’t cycle. With a Mirena IUD, you cycle but don’t bleed.

Risks and Side Effects of Hormonal Birth Control

Cancer

A high dose estrogen pill increases your breast cancer risk by three times [21]. A moderate dose estrogen pill increases your risk by 1.6 times, and the Depo-Provera injection increases your risk by 2.2 times [22]. One year after stopping the pill, your risk will return to normal.

On the plus side, the pill reduces your risk of colorectal, ovarian, and uterine (endometrial) cancers.

The protection from uterine cancer is important if you have PCOS and are therefore at greater risk of uterine cancer. Fortunately, there are other, better options for preventing uterine cancer. They include: 1) reversing your PCOS with natural treatment, and 2) taking natural progesterone to protect your uterine lining. Please see Chapter 7 including the [How to Prevent Uterine Cancer](#) section.

Blood Clots

All hormonal birth control carries a risk of blood clot, and that risk was known almost from the beginning. Barbara Seaman wrote about it in 1969 in her book *The Doctor's Case Against the Pill* [23]. We're now five decades later, and not much has changed. Again and again, the blood clot risk is downplayed. Again and again, the solution has been to find a new and better pill.

We're told that each new "generation" of the pill is better and safer, but it's all spin. Not unlike the "low-tar" advertising used by the cigarette industry, the terms "low-dose" and "new generation" are mostly just advertising.

"New generation" refers merely to the decade in which that particular progestin was invented. And oddly, the most modern progestins have the highest risk of a fatal blood clot of any progestin so far.

The absolute risk of a blood clot from any hormonal contraceptive is small. Even NuvaRing, which carries the highest risk, has an absolute risk of only 9.7 clot-events per 10,000 women per year [24] (compared to 2.1 clot-events in non-users of hormonal birth control). The clot risk goes way up if you smoke, which you're not supposed to do if you take hormonal birth control.

Chances are, the pill will not give you cancer or a blood clot. However, it probably will give you one or all of the following "minor" side-effects: Depression, loss of sex drive, hair loss, and weight gain.

So-called minor side effects are so common that they are the rule rather than the exception. The way they've been downplayed and ignored for the last three generations is perhaps the biggest tragedy of hormonal birth control.

Depression

Anyone who treats women knows that hormonal birth control affects mood. The fact that it's been "unproven" for fifty years is basically because no one was bothering to research it.

That all changed in October 2016 when the prestigious medical journal JAMA Psychiatry released a groundbreaking study called "Association of Hormonal Contraception With Depression" [25]. In the study, researchers

from the University of Copenhagen tracked one million women over 13 years and found that girls and women who use hormonal birth control are significantly more likely to be diagnosed with depression. The risk was greatest for teens using progestin-only methods such as an implant or Mirena IUD.

Researcher Professor Øjvind Lidegaard pointed out that his results may be an *underestimation* because he looked only at birth control users who went on to be diagnosed and take antidepressants. In reality, many women who experience mood changes on birth control simply quietly stop taking it and don't say anything to their doctor.

“All women, doctors, and contraception advisers should realize we have this potential side effect in the use of hormonal contraceptives.” [\[26\]](#)

Professor Øjvind Lidegaard

How can birth control affect mood? One way is by making your nervous system more sensitive to stress [\[27\]](#) [\[28\]](#). Another is by changing the structure of your brain. In 2015, UCLA Neuroscientist Nicole Peterson found that women who take hormonal birth control have altered brains compared to women who cycle naturally. She says:

“The change in the lateral orbitofrontal cortex may be related to the emotional changes that some women experience when using birth control pills.” [\[29\]](#)

Neuroscientist Nicole Peterson

Birth control could be the cause of your depression. If this is the first time you've considered that possibility, then you're not alone. Professor Jayashri Kulkarni from Monash University in Melbourne, Australia put it this way:

“The onset of depression can happen within a day of taking (the pill) or within a year of taking it. Women often tend to blame themselves for feeling depressed and forget to consider the effect of the daily hormone they are taking.” [\[30\]](#)

Professor Jayashri Kulkarni

That happened to my patient Lizzy.



Lizzy: Lifting the fog of depression

I met Lizzy when she was 21. By that point, she had already been on antidepressants for five years, ever since she was 16. She'd tried coming off but felt terrible and had to go back on. Lizzy told me she had no real hope of ever getting off antidepressants, and that was not why she had come to me.

She'd come for help with chronic yeast infections. Hormones are often a contributing cause of yeast infections, so I asked how her periods were. "Fine," she told me. She did not mention the pill, and I could not see that she'd listed it in the medication section of her intake form.

I had to ask outright. "Do you take hormonal birth control?"

"Oh, yes," she replied. "I started Yasmin for skin when I was 15."

Me: "Just before you developed depression?"

Lizzy: "Yes, I guess six months before."

I asked Lizzy if she had ever considered taking a break from the pill to see if it would improve her mood. It had never occurred to her and had never been suggested by her doctor. But she was happy to have a break and so stopped the next day. I also gave her a probiotic to help with the yeast infections.

I met with Lizzy again three months later, and two things had happened. First, her chronic yeast infections had gradually improved. But also, much to her surprise, her mood had dramatically improved within weeks of stopping Yasmin.

"I felt different almost immediately," she told me. "Like a fog had lifted."

Lizzy still takes her antidepressant but is now hopeful that with the right support, she may eventually wean it down.

Loss of Libido or Sex Drive

Hormonal birth control can be bad for your sex life because it switches off the testosterone you need for libido. It can also cause vaginal dryness and put you at risk of a condition called vaginismus which makes sex painful.

According to one survey, women who take hormonal birth control report less frequent sex, less frequent feelings of arousal, less pleasure, fewer orgasms, and less vaginal lubrication [31]. Unfortunately, it can take months, or even years, for libido to return to normal once the pill is stopped [32].

I often ask patients about libido. Many of them say that Yes, they did notice a decline on the pill, and an improvement when they stopped. Many women cannot say how their libido was before they started the pill because they were too young at the time.

Because really, who thinks to ask a teenage girl if she's suffered a drop in libido? Would she even know?

If you've had low libido ever since you started the pill at 15, then, of course, you'll think it's normal for you. Or worse, you'll think it's something that is wrong with you, rather than something that is wrong with the drug you've been taking.

You have the right to a libido, and that's true even if you are not planning to have sex anytime soon. Why? Because your libido is not just for sex. It's also an important part of your vitality and motivation for life.

You may have a high libido, or you may have a low libido, and that's fine. Everyone's libido is different. What matters is that your libido is the one that's normal for you and not the side effect of medication.

Special Topic: Why Men Won't Take Hormonal Birth Control

The technology exists for male hormonal birth control, but those drugs have never gone to market. Developers know men would never agree to switch off their hormones and suffer the resulting depression and low libido. And, honestly, why should they? Why should women?

Hair Loss

Some progestins such as levonorgestrel cause hair loss because they have a *high androgen index*, which means they are testosterone-like.

The American Hair Loss Association (AHLA) warns about the risk of hair loss from hormonal birth control. In 2010, they stated:

“It is imperative for all women especially for those who have a history of hair loss in their family to be made aware of the potentially devastating effects of birth control pills on normal hair growth.” [33]

Have you been taking a testosterone type of birth control? Read the ingredients.

Progestins with a **high androgen index** include medroxyprogesterone acetate, levonorgestrel, norgestrel, and etonogestrel. They cause hair loss by shrinking (or miniaturizing) hair follicles, which is a slow process. You could be on the birth control for many months—or even years—before you start to notice hair loss. Progestins with a high androgen index can also cause acne.

Progestins with a **low androgen index** include drospirenone, norgestimate, cyproterone, and natural progesterone. They do not cause hair loss when you take them, but they can cause hair loss when you stop them because of a rebound surge in androgens and androgen sensitivity.

Once your hair follicles have miniaturized on hormonal birth control, you will likely end up with the diagnosis of “androgenic” or “androgenetic” alopecia, which is not easy to reverse. For more information about androgenetic alopecia and how to treat it, please see the [Treatment of Androgenetic Alopecia](#) section in Chapter 7.



androgen

An androgen is a male hormone that promotes male characteristics.



alopecia

Alopecia means hair loss.

Weight Gain

Hormonal birth control causes weight gain because it interferes with a hormone called insulin. We'll learn more about insulin in Chapters 7 and 11. The pill also causes sugar cravings and prevents the muscle gain that you would expect to see with exercise [\[34\]](#). Finally, the pill's synthetic estrogen causes fat to be deposited on the hips and upper thighs and can worsen cellulite.

But Wait, There's More

We've seen that hormonal birth control can cause depression, loss of sex drive, hair loss, and weight gain. That's just the tip of the iceberg.

Hormonal birth control can also cause high blood pressure, nutrient deficiency, and reduced thyroid function. Hormonal birth control alters both your intestinal and vaginal bacteria and that can lead to digestive problems, yeast infections, and abnormal PAP smears. Finally, hormonal birth control will prevent you from forming healthy bones [\[35\]](#) [\[36\]](#).

As if all of those side effects were not enough, there are also the problems you may face when you stop hormonal birth control.

Coming Off the Pill

You will probably feel better when you stop hormonal birth control. Better mood, more energy, and regular cycles. That is the most common experience.

You may, however, develop problems such post-pill acne, PMS, or amenorrhea (lack of periods).

Post-Pill Acne

The steroid drugs in hormonal birth control work extremely well to clear acne. Both ethinylestradiol (synthetic estrogen) and the progestins drospirenone and cyproterone strongly suppress sebum (skin oil). In fact, cyproterone suppresses sebum to "childhood levels" [\[37\]](#), which is a bit frightening when you think about it. Adults are supposed to have more sebum than children, so it's an abnormal situation.

In response to the drugs, your skin has to up-regulate sebum, and that upregulation will continue even once you stop the pill. The result can be *more sebum than you ever had before*.

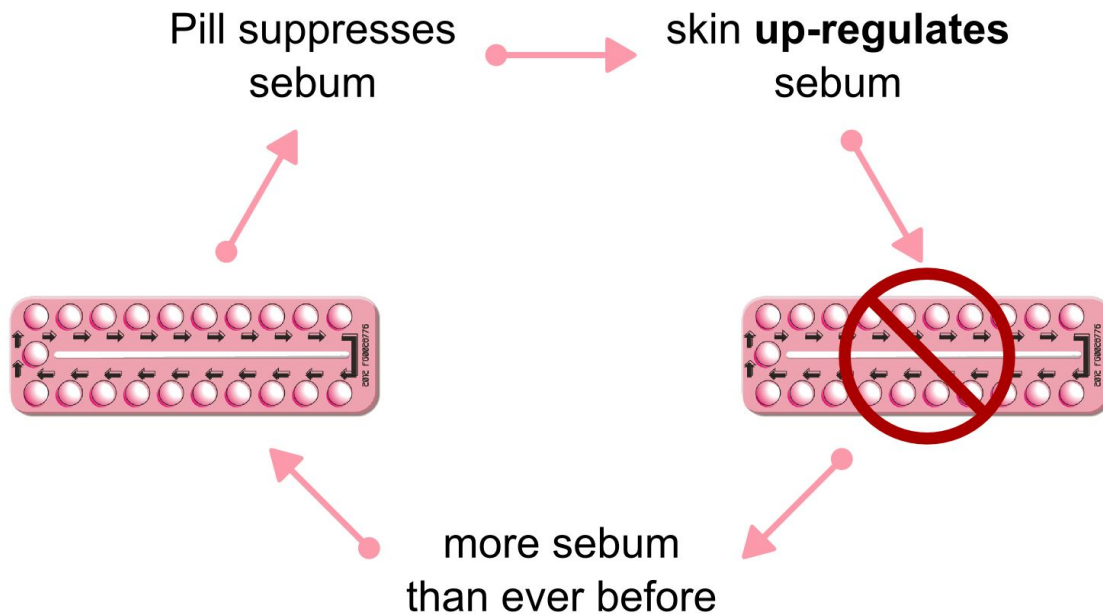


image 4 - pill addiction and withdrawal

At the same time, coming off the pill can trigger your ovaries to temporarily make more androgens as they kick back into action.

Post-pill acne is the result of the double-whammy:

1. Rebound sebum as you withdraw from a sebum-suppressing drug.
2. Rebound androgens as your ovaries become active again.

Fortunately, your ovaries should also start to make the hormones estrogen and progesterone, which are both *good for skin*.

The withdrawal process lasts six to twelve months, and post-pill acne peaks about six months off the Pill—just when you might be ready to give up. After that, your skin should start to improve.

If you're prone to acne, or if you suffered acne the last time you tried to stop the pill, please start natural treatment at least one month *before* you

stop the pill. That should reduce the severity of post-pill acne. See the [Acne Treatment](#) and [Anti-Androgen Treatment](#) sections in Chapter 7.

Post-Pill PMS

If you're like many of my patients, you may encounter the new symptom of PMS when you stop the pill.

It's because you're having real cycles for the first time in what may have been years. Your pill "cycles" were associated with a fairly even dose of synthetic hormones, so you didn't feel much change day-to-day. Your real cycles, on the other hand, are associated with a natural up and down of hormones—and you have to adapt to that.

Which might lead you to ask: "If a real period can cause PMS, then why have a real period?" And my answer is: "For the hormones."

Your own hormones estradiol and progesterone are so beneficial that they're worth putting up with a little PMS. And fortunately, you shouldn't have to put up with much PMS because it responds incredibly well to the treatments we'll discuss in Chapter 8.

Post-Pill Amenorrhea and PCOS

If you don't get your period after stopping the pill, the most important question to ask is: "*What were your periods like before you took the pill?*"

If your periods were irregular, then something was going on back then and coming off the pill has simply unmasked it. With the help of this book, you can now go back to the drawing board and figure out what that something is, and fix it.

If on the other hand, your periods were regular before the pill, then you now have a type of post-pill amenorrhea or post-pill PCOS, which we'll discuss in Chapter 7.

The Best Thing About Breaking Up with Hormonal Birth Control

Think of it this way: Coming off the pill is the first test on your monthly report card—and that's a good thing. It's the first time your body has had a chance to show you what it can do. Getting a period right away—or not—

gives you important clues about your health. With the help of this book, you should have some ideas of what to do next.

In a way, this entire book is your guide to coming off birth control. I have also included a special section in Chapter 11 “How to Come Off Hormonal Birth Control.”

Going forward, you may need an alternative method of non-hormonal birth control. That’s the topic of the next chapter.

Chapter 3



Better Birth Control. All the Options

This book, as well as being a guide to healthy periods, is also an accidental guide to enhanced fertility. The healthier your periods, the more fertile you will become. As soon as you start to get good grades on your monthly report card, you will have invited your body into full baby-making mode. If a baby is not what you're after right now, please—please—read this chapter before you go any further.

If you feel daunted by the prospect of natural birth control, you are not alone. Natural methods are not as convenient as the pill. All of them require some compromise or effort by you and your partner. I wish I could offer a healthy, non-toxic, simple method of contraception that requires no compromise or effort, but I cannot. At this stage, that dream method of contraception simply does not exist. There is no herbal medicine, nutritional supplement, or natural hormone you can take to avoid pregnancy. Natural supplements can only make you *more* fertile—not less.

Hormonal methods of contraception damage your body because that is how they work. To avoid pregnancy, birth control has to fight against the very thing that your body is trying to do, which is to become pregnant. Put simply, when you're healthy, your body wants to be pregnant. Therefore, there are really only two ways to avoid pregnancy: Damage your body or outsmart your body.

You are a modern, smart woman. I assure you: You can outsmart your body. Avoiding pregnancy is not as mysterious or difficult as it has been made out to be.

Think of it this way: You are fortunate to be a healthy, fertile, sexually active woman. And are fortunate to live in a time when contraception is legal and available to you. Hopefully, your partner is loving and liberated and willing to play his part in avoiding unwanted pregnancy. If so, then embrace your good fortune, and accept the task—as a couple—of avoiding an unwanted pregnancy.

In this chapter, I will outline three types of methods of contraception. Type 1 methods are the most natural but do require some responsibility by both partners. Type 2 methods are a little bit toxic, or potentially a little bit harmful, but are easier to use, and do not require any responsibility by your male partner. Type 3 methods are harmful.

The advantages of Type 1 and Type 2 methods are that they do not suppress ovulation, so they permit you to make progesterone, which, as we'll see in the next chapter, is the hormone most important for period repair.

Disclaimer: This chapter is a brief survey of non-hormonal methods of contraception and not a complete how-to manual. Once you have chosen a method, please seek detailed instructions about its proper use. See the Resources section for more information.

Type 1 Contraceptive Methods

Type 1 contraceptive methods are non-hormonal, non-toxic, and carry no health risk. They do not suppress ovulation, and so permit you to make progesterone.

Fertility Awareness Method or FAM

Here's something you might not have learned in sex education class. A man is fertile every day, but as a woman, you are fertile only six days per menstrual cycle.

To avoid pregnancy, you must determine *which* days you are fertile and then abstain from vaginal intercourse or use a barrier method. It's called *fertility awareness method* (FAM), and it's surprisingly easy to do. Fertility awareness is scientific because it uses observations of three concrete signs of fertility: waking body temperature, cervical fluid, and cervix changes. It's different from the *rhythm method* which is an old style of FAM that relies solely on dates on a calendar.

If your doctor scorns FAM, it's either because she thinks you're not smart enough to do it (you are!), or because she has confused the modern symptothermal method of FAM with the rhythm method. Many doctors make that mistake. A recent Australian study found that the majority of family doctors "have significant knowledge deficits regarding physiological interpretation of fertility" [\[38\]](#). Please direct your doctor to the 2015

American College of Obstetricians and Gynecologist (ACOG) statement about fertility awareness method [\[39\]](#), or find a new doctor.

In short, your fertile days are the five days before ovulation (because that's how long sperm survive), and the one day after ovulation (because that's how long the egg survives). After ovulation, you have a short 24-hour window to ovulate once more (and maybe conceive twins). Your egg(s) survive for another 24 hours, and then you cannot ovulate again for the rest of that cycle. You cannot become pregnant for the rest of that cycle.

When used correctly, fertility awareness method can be as effective as the pill. One study of women trained in FAM found the method to have a perfect use failure rate of just 0.6 percent [\[40\]](#) which is pretty close to the 0.3 percent perfect use failure rate of the pill.



contraception failure rate

Contraception failure rate is the percentage of couples who experience an accidental pregnancy during one year of use. It is expressed as *perfect use* and *typical use*.

Perfect use means the failure rate for women who use the method perfectly. For most methods other than the IUD, perfect use is not as good as typical use, which is the failure rate for women who use the method in a typical way.

For FAM, typical use means having unprotected sex on an unsafe day. For the pill, typical use means forgetting to take a pill. The typical use failure rate for the *symptothermal method* of FAM is 1.8 percent [\[41\]](#), which is still better than typical use of the pill, which is 9 percent [\[42\]](#).

So how do you do FAM? First and foremost, you track your physical signs of ovulation—namely temperature.

Physical Signs of Ovulation

Temperature

Waking temperature, also called basal body temperature (BBT), is the cardinal sign for fertility awareness method. It's your under-the-tongue temperature first thing in the morning after you wake but before you get out

of bed. You need a good quality thermometer (preferably a basal body temperature thermometer) that measures temperature to at least one decimal place (97.7°F).

How can temperature tell you about ovulation? It can detect progesterone, which, as you may recall, is the ovarian hormone you make *after* ovulation. Progesterone has many effects in your body, but it has the one very handy effect of raising your body temperature. For example, before ovulation, your waking temperature is between 97.0°F (36.1°C) and 97.7°F (36.5°C). After ovulation, your waking temperature increases by about 0.5°F (0.3°C), and will stay that way until you get your period. A few consecutive days of that small but significant increase in temperature is enough to know for *certain* that you ovulated and cannot become pregnant for the rest of that cycle.

Your temperature goes up *after* ovulation, which makes it easy to identify your post-ovulation infertile or safe days. It's a bit harder to identify your *pre*-ovulation safe days, but it is possible. With the right training, you can predict your pre-ovulation safe days by interpreting your cervical fluid (see below). Alternatively, you can predict your safe days (both pre- and post-ovulation) with a computer algorithm from a medically certified device such as Daysy Fertility Monitor .

With Daysy , you *do not need to be trained in FAM*. Instead, you simply take your temperature, and the computer algorithm does the rest. It calculates your safe (infertile) and unsafe (fertile) days based on its database of five million cycles. It also learns the nuances of your own cycle the longer you use it. I like Daysy because it undergoes independent quality testing every year and claims a failure rate of just 0.7 percent [\[43\]](#). Daysy doesn't use information about cervical fluid because it doesn't add to the effectiveness of their algorithm.

Of course, there are many other excellent FAM and period apps. Some, such as Kindara , can assist you with your FAM calculations—but you still need to be trained in FAM. Others, such as Clue , cannot be used to prevent pregnancy, but are still a great way to track your cycle.

I'm a big fan of period apps in general, but unless you're trained in FAM and taking your temperature and/or checking your cervical fluid, you cannot use a period app to prevent pregnancy.



To prevent pregnancy, you need training in FAM or a certified computer algorithm. You cannot rely on the “fertile window” of a standard period app.

Cervical fluid or fertile mucus

In the *symptothermal method* of FAM, you track your cervical fluid because it's the sign of ovulation that occurs *before* ovulation. Cervical fluid, also called cervical mucus or fertile mucus, is a unique type of [vaginal discharge](#) that looks and feels just like raw egg white. It is clear, stretchy, and slippery. You will see it on the toilet paper after you wipe or feel it at your vaginal opening.

You will usually see some form of fertile mucus during the days leading up to ovulation. The function of cervical fluid is to transport sperm rapidly through your uterus to your egg. If you are trying to prevent pregnancy, then fertile mucus is the red flag that you are fertile.

Special Topic: Be Careful Interpreting Your Cervical Fluid

Cervical fluid is most obvious in the days before ovulation but you will see it *anytime* you have high estrogen compared to progesterone. For example, you can see it early in your cycle if you have too much estrogen. You can even see it *after ovulation* if you do not make enough progesterone. It is, therefore, possible to see fertile mucus more than once in your cycle. It does *not* mean you ovulated more than once.

Cervix position

The softness and position of your cervix are the final physical signs of ovulation. Remember, your cervix is the bottom part of your uterus, where the opening is, and where the menstrual blood comes out. Normally, your cervix is low (about one finger length inside your vagina) and has a

surprisingly hard texture, like a smooth donut or the tip of your nose. In the days just before ovulation, your cervix will be higher and softer.

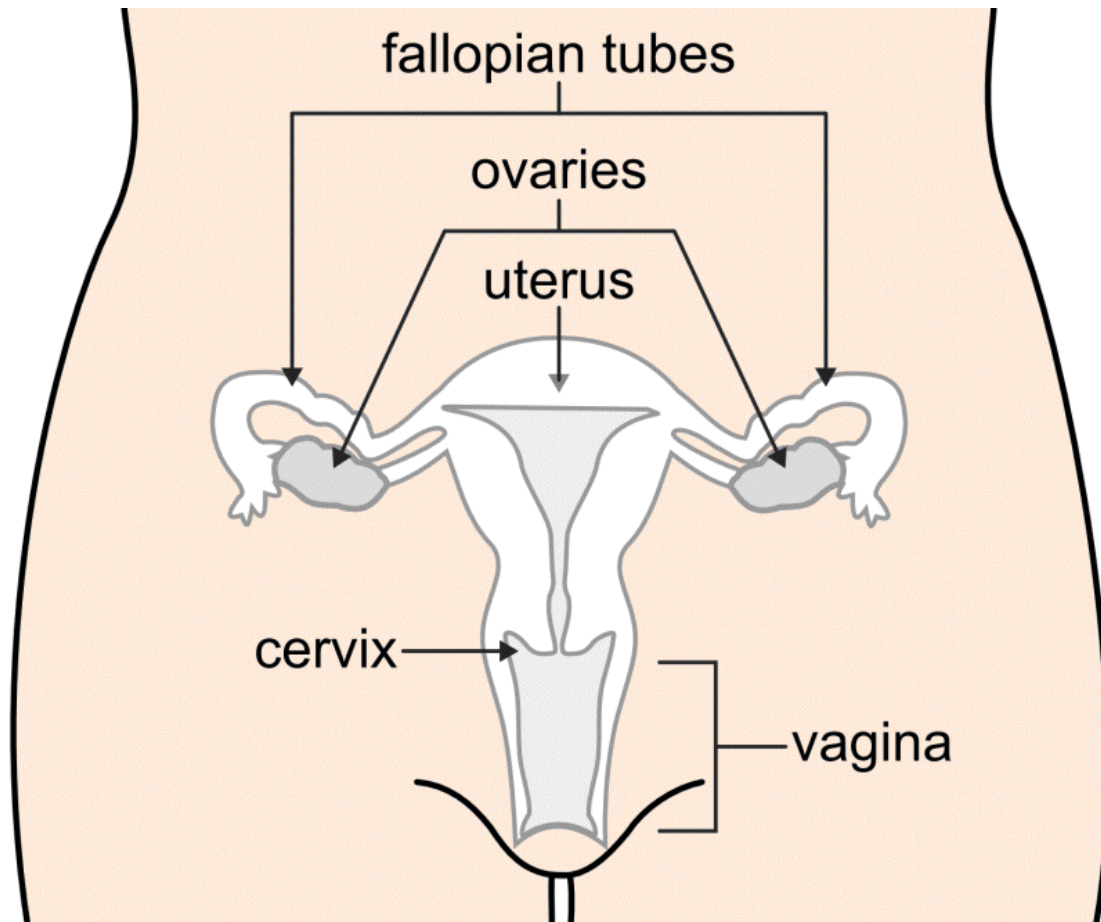


image 5 - female reproductive anatomy

Ovulation test strips

LH surge or peak is another sign of ovulation. It's a surge in luteinizing hormone which you can detect with a urine test strip. Start testing by at least day 8 of your cycle, and when you see a positive LH test, it usually means you will ovulate within the next 36 to 40 hours.



luteinizing hormone (LH)

Luteinizing hormone is the pituitary hormone that signals your ovary to release an egg.

Measuring LH surge can be helpful when you're trying for pregnancy, but it is not usually used as part of FAM for several reasons. First, most LH test kits will miss about 20 percent of LH peaks ^[44]. Also, by the time you see an LH surge, it is too late to abstain because you will have already been fertile for several days. Finally, you can see *false positive* LH results if you have the condition polycystic ovarian syndrome.

Other Signs of Ovulation

Other physical signs of ovulation include a mild twinging pain (*mittelschmerz*), light bleeding or spotting, abdominal bloating, fluid retention, and breast tenderness. You may or may not experience these signs, but you cannot use them for fertility awareness method.

Tracking Your Monthly Report Card

The best thing about FAM is that it gives you better clues about your period. For example, you can know *for certain* that you ovulate and *when* you ovulate. And once you ovulate, you can know exactly (almost to the day) when your period will come. That's true even if you have irregular cycles.

Knowing if and when you ovulate is essential for understanding your periods and your health.

If you do ovulate, then you already have a pretty good result on your period monthly report card. You also have new kind of body awareness which is called *body literacy* (a lovely term coined by my colleague and reproductive health advocate Laura Wershler).

If you do *not* ovulate, then you are alerted to the fact that something is wrong. Not ovulating could mean that you are under stress or not eating enough. It could also mean that you have an underlying medical problem such as polycystic ovarian syndrome or thyroid disease, and you need to see your doctor. Hopefully, your doctor is responsive to the information, but he or she may not be. That's what happened to my patient Sylvia.



Sylvia: Why do you care if you ovulate or not?

Sylvia had been trying to use the FAM device Daysy but was not seeing any green or *safe days*. She knew that meant she was not

ovulating, so she showed her charts to her family doctor. Unfortunately, he was not a good doctor and was not particularly interested.

Doctor: “Do you want another baby?”

Sylvia: “No.”

Doctor: “Then why do you care if you ovulate or not?”

Sylvia also had the problem of irregular cycles, but her doctor had a simple solution for that. “You should be happy to have fewer periods,” he said. “If you’re worried, you can take the pill.”

I ordered blood tests for Sylvia and discovered that she had elevated male hormones and therefore qualified for the diagnosis of polycystic ovarian syndrome (PCOS). She had a small amount of the facial hair typical of the condition, but her main symptoms were lack of ovulation, and irregular cycles.

“I’m glad I was tracking my cycle,” she said. “Or I would never have known.”

Sylvia started natural treatment for PCOS, and after three months she ovulated and finally saw some *safe* days on her Daysy FAM device.

Stories like Sylvia’s are common, but they’re not the rule. Most doctors will be a bit more helpful when presented with the right information and questions. Please see the [How to Talk to Your Doctor](#) section in Chapter 11.

In summary, FAM is a great way to prevent pregnancy. I would say it’s the best. It’s effective, and suitable for every age and situation—even if do not have regular cycles. The only downside to FAM is that you’ll have to abstain from vaginal intercourse or use a barrier method on your fertile days. If that’s not something you want to do, then please consider a copper IUD discussed below.

And just a reminder: With the exception of the Daysy Fertility Monitor , all FAM methods require some training. Please read Toni Weschler’s book *Taking Charge of Your Fertility*, or seek training from one of the several organizations and online trainers listed in the Resources section.

Male Condoms

Worldwide, male condoms are the most popular form of birth control, and it’s easy to understand why. Condoms are simple, inexpensive, and

don't present a health risk to either partner. You simply put a condom over your partner's penis before intercourse. It catches the ejaculated sperm and prevents it from entering your body.

Condoms are a barrier method. They are the best barrier method because 1) they reduce the risk of sexually transmitted infection, and 2) they can be used without toxic spermicide.

Special Topic: Avoid Condoms Packaged with Spermicide

Condoms packaged with spermicide offer no advantage over condoms packaged with normal lubricant. They are no more effective than normal condoms for preventing pregnancy or sexually transmitted disease. In fact, the toxic effect of the spermicide could make you more susceptible to infections, especially bladder infections. If you suffer frequent bladder infections, please read your condom package to see if spermicide is the problem.

Condoms need not mean a loss of pleasure. There are new, more comfortable brands of condoms such as the crowd-sourced (purportedly unbreakable) condom Hex™. Your partner may also want to think about taking the time to find a condom that fits. Please see the Resources section for a link to the *myONE Perfect Fit* site from ONE Condoms.

The male condom has a perfect use failure rate of 2 percent and a typical use failure rate of 18 percent [\[45\]](#).

Female Condoms

The female condom is a latex tube or sheath with a flexible ring at each end. One ring is inserted into your vagina and lodged there during intercourse. The outer ring remains outside your vulva.

The main advantage of the female condom is that you are in control. You can insert it hours before sex, which means no distraction during foreplay. Because the outer ring of the female condom covers your entire vulva, it

offers better protection against sexually transmitted disease than the male condom. The outer ring may also enhance your sexual pleasure by rubbing against your clitoris.

The female condom has a perfect use failure rate of 5 percent and a typical use failure rate of 28 percent [\[46\]](#). Like the male condom, it reduces the risk of sexually transmitted infections.

Diaphragm Without Spermicide

A diaphragm is a soft latex or silicone dome that seals against your vaginal wall and prevents sperm from entering your uterus. You can insert up to two hours before sex, but then you must leave it in for six hours after. Unlike the female condom, your partner will not feel a diaphragm.

The old latex style of diaphragm had to be fitted by a doctor. It also had to be used with a spermicide gel, which would put it into the Type 2 category of contraception that does some harm (discussed below).

The new silicone Caya diaphragm is used with a non-toxic gel, and is one-size-fits-all so does not need to be fitted by your doctor. You can buy Caya directly online or by prescription from your local pharmacist.

A diaphragm has a perfect use failure rate of 6 percent and a typical use failure rate of 12 percent [\[47\]](#). It does not protect against sexually transmitted disease.

Cervical Cap Without Spermicide

The cervical cap is similar to the diaphragm but smaller. It shaped like a little sailor's cap and fits around your cervix. You can leave a cervical cap in place for up to two days, and use it with a non-toxic gel.

The cervical cap Femcap comes in three different sizes, and is available in some countries without a prescription. In the U.S., it must be fitted and prescribed by a doctor.


Femcap has a typical use failure rate of 8 percent [\[48\]](#). It does not protect against sexually transmitted infections.

For links to Femcap and the Caya diaphragm, please see the Resources section.

Withdrawal or Pull-Out Method

In this method, your partner withdraws his penis and ejaculates outside of your vagina. Withdrawal has been popular for more than 2,500 years and is still widely used today. Withdrawal, also known as *coitus interruptus*, is controversial because it's perceived to be less effective than other methods. But when used properly, withdrawal has a perfect use failure rate of just 4 percent, which is better than some of the barrier methods.

Success with withdrawal depends on the skill and commitment of your partner, so I do not recommend it for teenage couples.

 **You cannot rely on withdrawal** if you have sex twice in a row. That's because sperm remains in the penis after ejaculation and can seep into your vagina during your second session. If you want to have sex a second time, then ask your partner to urinate to wash out the sperm.

Type 2 Contraceptive Methods

Type 2 contraceptive methods are less preferred methods because they carry some toxicity or health risk. However, they are better than Type 3 methods because they do not suppress ovulation. They permit you to make progesterone.

Type 2 methods are not ideal, but they are a still a reasonable choice.

Copper Intrauterine Device (IUD)

The IUD is a device made of plastic and copper. It looks a bit like an earring and is inserted into your uterus. Insertion is a simple procedure that happens in your doctor's office. It can be a little uncomfortable, but it's quick. It is not surgery and usually does not require sedation or general anesthesia.

One woman described IUD-insertion this way [\[49\]](#):

It's like a PAP smear test but a little weirder and more uncomfortable.

To remove the IUD, your doctor will find the removal string and pull it back out through your cervix. Self-removal is possible and safe [\[50\]](#), although not recommended at this time.

I mention self-removal only to point out that removal is simple and something you can request from your doctor at any time. A patient once told me she'd like to try an IUD but doesn't want to have to "convince her doctor to remove it" one day. Just to clarify: There should be no *convincing* involved. It's your body. If and when you want your IUD out, your doctor will take it out.

Perhaps in future, we will have self-removable IUDs.

The best thing about the copper IUD is that it does not change your hormones. It does not prevent ovulation. Instead, the IUD prevents pregnancy in two ways.

1. The copper ions impair sperm motility.
2. The simple physical presence of something in the uterus prevents embryo implantation.

The IUD is one of the oldest forms of birth control. In ancient times, women inserted objects such as silver and silk string in their uteruses. The earliest modern versions of the IUD were silver or stainless steel, but copper is more effective because it impairs sperm motility.

The copper IUD is highly effective contraception, with a failure rate of 0.6 percent. And it's simple. Once inserted, it can stay in your uterus for ten years or more. When your doctor finally removes the IUD, you should regain full fertility within just one menstrual cycle [\[51\]](#).

Many women love the copper IUD, and it currently has the highest rate of user satisfaction of any method [\[52\]](#). It's also effective as emergency contraception.

Modern IUDs are safe for all women, including teenagers and women who have not yet had children. In 2014, the American Academy of Pediatrics stated that IUDs are a first-line contraceptive choice for teenagers, and overturned the pervasive—but unfounded—opinion that IUDs should not be used until after childbirth.

Safety Concerns with the Copper IUD

If you're like many women or even doctors, then you may have a vague unease that the copper IUD is not safe. It's a dark memory from a terrible time more than 40 years ago. Back then, a poorly designed IUD called the Dalkon Shield caused 18 deaths and thousands of pelvic complications among its 2.8 million users. The problem was the multifilament string of that particular IUD, which grew bacteria. Modern IUDs have a different string and carry no significant risk of infection [\[53\]](#).

Pain

You will probably experience some pain with insertion and for a few days after. You may also notice that your periods are more painful for the first 12 months after insertion. They should then return to normal [\[54\]](#).

Heavy periods

A copper IUD will increase the volume of your menstrual flow by 20–50 percent. For example, if your flow is normally 50 mL per month, then it will increase to between 60 to 75 mL. It may then decrease again by the end of the first year [\[55\]](#). Heavier periods can be managed by treatments discussed in the [Heavy Menstrual Bleeding](#) section in Chapter 9.

Expulsion

An IUD can come out, and if you don't realize it's happened, then you could become pregnant. Signs of expulsion include pain, spotting, and the absence or lengthening of the string. The risk of expulsion is highest during the first month after insertion (5.7 percent) and then decreases to 2 percent per year [\[56\]](#).

A new frameless IUD called GyneFix (available only in Europe) is easier to insert and has a lower risk of expulsion [\[57\]](#).

Infection

If you have a pre-existing infection with gonorrhea or chlamydia, then you are at risk for pelvic inflammatory disease (PID) during the three weeks after IUD insertion [\[58\]](#). Your doctor should screen for those common infections before inserting an IUD.

Copper toxicity

Some women report increased anxiety after IUD insertion and attribute it to possible copper toxicity. Like so many aspects of women's health, there is very little research, but one study *did* find that IUD users had higher serum copper compared to non-users [59].

Copper excess is more likely if you are deficient in zinc so I recommend testing your zinc and copper levels before inserting an IUD. And keep in mind that you obtain quite a lot of copper from other sources, including dark chocolate which contains 2 mg per serving.

I would love to see more research on this topic.



The pill can also cause copper excess because synthetic estrogen causes the body to retain copper.

Hormonal Intrauterine Device (Mirena IUD)

Mirena and Skyla are hormonal IUDs that releases the progestin levonorgestrel into your uterus. Mirena rightly belongs in the Type 3 hormonal contraception section, but I've included it here for comparison's sake.

With the hormonal IUD, levonorgestrel acts locally in your uterus to prevent pregnancy in three ways:

1. It thickens cervical mucus.
2. It inhibits sperm survival.
3. It prevents the build-up of your uterine lining.

Mirena users have a blood level of levonorgestrel which is about one-tenth that of pill users.

The hormonal IUD does not aim to suppress ovulation, which is why I view it as the least harmful of all the hormonal contraceptive methods. Unfortunately, as we saw in the last chapter, it does suppress ovulation some of the time.

You can leave Mirena in place for five years before the progestin runs out. Then it must be replaced.

Mirena will make your period very light—almost non-existent. That’s why it’s used to treat heavy periods.

Spermicide

Spermicide (or sperm-killer) prevents pregnancy by killing sperm.

Historically, humans have tried many substances to kill sperm. The list includes crocodile dung, wool soaked in acacia, lemon juice, and—in the 1930s—Lysol (which was horrible). None of those substances were terribly effective, and the modern spermicide nonoxynol-9 is not much better. When used alone as a foam or jelly, nonoxynol-9 has a failure rate of 20 percent [\[60\]](#). To improve its effectiveness, spermicide is typically used with a sponge or diaphragm. We discussed diaphragms in the Type 1 section above.

Nonoxynol-9 is essentially a cleaning product. There’s no question that it’s toxic (that’s its job!). Regular exposure to nonoxynol-9 causes itching, burning, and an increased frequency of vaginal infections and sexually transmitted disease.

Female Tubal Ligation

Tubal ligation or “having your tubes tied” is permanent blockage of your Fallopian tubes so that eggs can no longer pass into your uterus. Ligation requires keyhole surgery under general anesthetic. The surgeon cuts into your pelvic cavity and then severs, clamps, cauterizes, or removes your Fallopian tubes. The current recommendation is to remove the tubes entirely to reduce the long-term risk of ovarian cancer [\[61\]](#).

There is also a non-surgical method of tubal ligation called Essure which involves the insertion of fiber coils up through the uterus and into each tube. There are serious safety concerns about Essure, so I do not recommend it.

Tubal ligation is highly effective, long-term contraception. Ligation reversal can be attempted but is not usually successful, so the method is suitable only if you are 100 percent certain you do not want more children.

Tubal ligation carries the risks of surgery and general anesthetic. Officially, it does not interfere with ovulation or hormonal balance, but

women with a history of tubal ligation are more likely to go on to suffer irregular and heavy periods [\[62\]](#).

Vasectomy

Vasectomy is the male equivalent of tubal ligation. It involves the cutting, clipping, or cauterizing of the vas deferens tubes (tubes which carry sperm from the testicles to the penis). Unlike female tubal ligation, vasectomy is not surgery. It's done in a doctor's office with local anesthetic.

Vasectomy is highly effective, long-term contraception. It is basically irreversible. Reversals can be attempted, but are successful in fewer than 50 percent of cases.

Up to 10 percent of men undergoing vasectomy can develop post-vasectomy pain syndrome [\[63\]](#).

Vasalgel

A new method of reversible male contraception is under development by the non-governmental organization, the Parsemus Foundation. It is called Vasalgel and is a one-time injection of gel into the vas deferens tubes. The gel blocks sperm in a way similar to vasectomy but can be flushed out with a second injection when a man wishes to restore his fertility. Vasalgel is currently undergoing clinical trial and may be available by 2018 [\[64\]](#).

Type 3 Contraceptive Methods

Hormonal contraception includes all pills, implants, patches, injections, and vaginal rings. They use steroid drugs to suppress ovulation.

For that reason, they are all equally unacceptable for period health.

Chapter 4



What Should Your Period Be Like?

Menstrual bleeds are nicknamed “periods” because they arrive *periodically* in a regular monthly pattern.

Why monthly? The timing of a healthy cycle is determined by three important events in your ovaries. First, your ovarian follicles enter a final race to ovulation. This stage—called your follicular phase—takes *approximately* two weeks (but it can be shorter or significantly longer). Then, you have ovulation, which takes about one day. Finally, you have your luteal phase, which takes pretty close to 14 days.

The timing of a healthy period is the sum of three main phases:

1. The follicular phase, which can last anywhere from 7 to 21 days, PLUS
2. Ovulation, which lasts one day, PLUS
3. The luteal phase, which lasts 10 to 16 days

If you’re an adult, it all adds up to a healthy menstrual cycle of anywhere between 21 to 35 days. 28 days is the average, but not the rule.

If you’re a teenager, your cycle will be longer because you can have a follicular phase as long as 32 days. Your luteal phase is the same 10 to 16 days. It all adds up to a healthy menstrual cycle of anywhere between 21 to 45 days.

To determine the length of your menstrual cycle, start counting from your first day of heavy bleeding. Call this “day 1” and enter it as the first day of your period on your period app. The days of light spotting that come before your heavy day are **not** part of this cycle. They are the final days of your previous cycle.



As an adult, it’s normal to have a cycle of anywhere from 21 to 35 days.

Let’s now look at your three phases in more detail.

Follicular Phase and Estrogen

A healthy period starts with healthy follicles. Your follicular phase begins when a few follicles (usually six to eight) enter the final days of their race to ovulation. It's important to understand that the total lifespan of each follicle is much longer than just the two or three weeks of your follicular phase. Your follicles actually started their race to ovulation months before.



follicle

An ovarian follicle is a sac that contains one egg (oocyte). It is the part of your ovary that produces estrogen, progesterone, and testosterone.

It takes one hundred days for your follicles to mature from their dormant state all the way to ovulation. If your follicles were unhealthy for any part of that maturation process, the result could be a period problem *months later*. When you see it this way, you can understand why period health is a long-term project. Your period problem now could be the result of something that was happening with your health months ago.

When your follicles enter the final stage of their development—your follicular phase—things really start to heat up. That's when the pituitary hormone FSH (follicle-stimulating hormone) pushes you closer to ovulation and stimulates your follicles to make estrogen.



follicle-stimulating hormone (FSH)

Follicle-stimulating is a pituitary hormone that stimulates ovarian follicles to grow.



pituitary gland

The pituitary gland is a small endocrine gland attached to the base of the brain.

FSH is like the whip that snaps over your follicles. When you are young, you have a lower level of FSH, so your follicular phase will tend to be longer. When you are older (in your 40s), you have more FSH, so your follicular phase will tend to be shorter.

Estradiol, Your Queen Estrogen

Your developing follicles release an important estrogen called estradiol. Estradiol is not your only estrogen. You also have estrone from fat tissue and a number of estrogen metabolites made by your gut bacteria. But estradiol is the estrogen made by your developing follicles, and it's your best estrogen.

Estradiol is your happy hormone or *yang hormone*. It stimulates mood and libido because it boosts the neurotransmitters serotonin and dopamine.



serotonin

Serotonin is a neurotransmitter that promotes feelings of well-being and happiness.



dopamine

Dopamine is a neurotransmitter associated with motivation and pleasure.

Estradiol has many other benefits for bones, muscles, brain, heart, sleep, skin, and metabolism. For example, estradiol enhances your sensitivity to insulin [\[65\]](#), and so helps to prevent a pre-diabetic condition called *insulin resistance*, which we'll discuss Chapter 6.

One of estradiol's main jobs is to stimulate your uterine lining to grow and thicken in preparation for a baby. It's quite simple: The more estradiol you have, the thicker your uterine lining, and the heavier your period will eventually be.

Estradiol also stimulates a unique type of vaginal discharge called fertile mucus.

Special Topic: Vaginal Discharge or Cervical Fluid

It's normal to see white stuff in your underwear. It's a combination of shed cells from your vaginal wall as well as healthy bacteria and—most importantly—fluid or mucus made by your cervix. In addition to its role in fertility (see below), vaginal discharge keeps your vagina moist and healthy and free from infection.

Healthy vaginal discharge is white or light yellow and has a mild salty odor. If your vaginal discharge has a bad smell or causes discomfort or itching, you might have an infection and should see your doctor.

If your vaginal discharge is a copious slippery blob, it's something normal and healthy called fertile mucus.

Fertile Mucus

Cervical fluid or fertile mucus is the creamy and then wet and slippery kind of discharge you see when you have a lot estrogen. At its peak, fertile mucus looks and feels like raw egg white and can occur in a fairly large quantity. You'll notice fertile mucus on your panties or toilet paper after you wipe and it can be a bit disconcerting when you see it for the first time.

Fertile mucus is stimulated by estrogen, which is why it normally occurs when your estradiol is high just before ovulation. Its main purpose is to help sperm survive and get where they're going. Fertile mucus contains microscopic "sperm escalators" that hasten sperm into your uterus. If sperm had to swim unassisted, they would take hours to reach your waiting egg. Inside fertile mucus, sperm are propelled to your Fallopian tubes in just minutes. Progestin-only birth control methods such as the Mirena IUD work primarily by preventing the formation of fertile mucus.

As we discussed in the last chapter, fertile mucus is an important part of the fertility awareness method of birth control (FAM), but please be careful. Fertile mucus *usually* occurs during the days before ovulation, but it can actually occur *anytime* that estrogen is high. For example, if your follicular

phase is particularly long and drawn-out as might happen during stress, then your estrogen will rise and fall, and you could see several episodes of fertile mucus before you finally ovulate. You could also see fertile mucus without ever ovulating at all. See the [Abnormal Timing of Fertile Mucus](#) section in Chapter 5.

Ovulation

As your follicular race proceeds, eventually, one (or more rarely, two) of your follicles reach the finish line. Your winning, dominant follicle swells, and then—triggered by luteinizing hormone (LH)—finally ruptures to release its egg.

The release of the egg is ovulation. The final stages of swelling can take a few hours, but the event itself occurs over just a few minutes. As the egg ruptures out of your ovary, you may notice a twinge or mild pain (*mittelschmerz*) on one or both sides of your lower pelvis.

Ovulation is an all-or-nothing event. You cannot sort-of ovulate. You either ovulate, or you don't. Once you have ovulated, there is no going back. Your egg has been released, and it cannot be recalled. It's like the release of doves at your wedding. You are committed. After ovulation, you will either be pregnant, OR you will get your period approximately two weeks later. There's no third option. It's not possible to ovulate but then not be pregnant or get your period.



The average day of ovulation is day 14, but don't worry if it doesn't happen then. If you have a longer cycle, then you have a later ovulation. To estimate when your next ovulation *might* occur, count back approximately two weeks from the first day of your next expected period.

After your egg is released, it's swept up into one of your Fallopian tubes, where it can be fertilized if sperm is present. Only one (or rarely two) eggs are released. The other follicles who lost the race to ovulation are reabsorbed by your ovary.

Ovulation is a momentous event, even if you're not trying for pregnancy. Why? Because ovulation is how you make progesterone.

Luteal Phase and the Rise of Progesterone

After ovulation, things start to get interesting. That's when your emptied follicle restructures itself into a progesterone-secreting gland called the *corpus luteum*.



corpus luteum

The corpus luteum is a temporary endocrine gland that forms from the emptied ovarian follicle after ovulation.



luteal phase

The luteal phase of a menstrual cycle is the 10-16 days between ovulation and the bleed. It is determined by the lifespan of the corpus luteum.

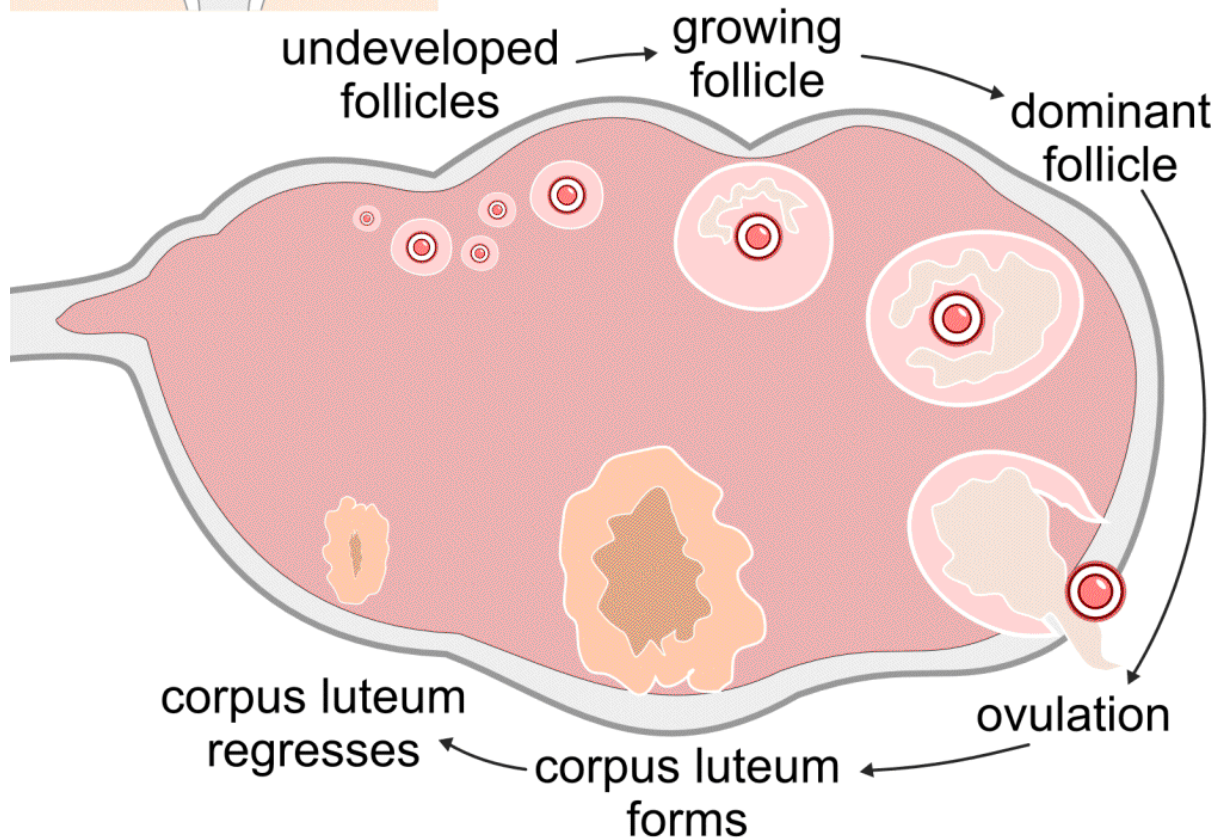
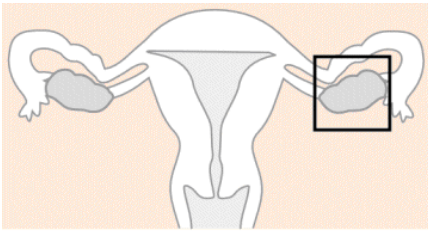


image 6 - the journey from follicle to corpus luteum

Your corpus luteum forms rapidly, and it's an amazing feat. The tissue grows from virtually nothing to a fully vascularized, 4-centimeter structure in less than one day. Researcher Dr. Sarah Robertson at the University of Adelaide in Australia said this about the process:

“There isn't anywhere else in the body where you have to develop a tissue from scratch in such a short period of time and get a blood supply in so fast.” [\[66\]](#) [\[67\]](#)

Dr. Sarah Robertson

Your corpus luteum is dynamic, vital tissue. And, remember, it is the final stage of your follicle's hundred-day journey to ovulation. The health of your corpus luteum is affected by everything that affected your follicles during *all of those hundred days*.

For example, your corpus luteum can be affected by inflammation, thyroid disease, or a problem with insulin, which we will explore in the coming chapters. It can also be affected by a deficiency of nutrients such as magnesium, B vitamins, vitamin D, iodine, zinc, and selenium.

Your follicle requires good health and nutrition for a solid one hundred days, and then, it must still have enough oomph and vitality to form a 4-centimeter corpus luteum gland in one day. It's an ovarian triathlon, and that's why general health and nutrition are so important for period health.

Progesterone, Your Calming Hormone

Your reward for passing the ovulation finish line and making a corpus luteum? Progesterone, which is the key hormone for period health.

Progesterone is made by your corpus luteum, and it's a startlingly beneficial hormone. Progesterone's biggest job is to hold and nourish a pregnancy, which is how it got its name: Pro-gestation hormone, shortened to progesterone.

But progesterone does a lot more for you than just pregnancy.

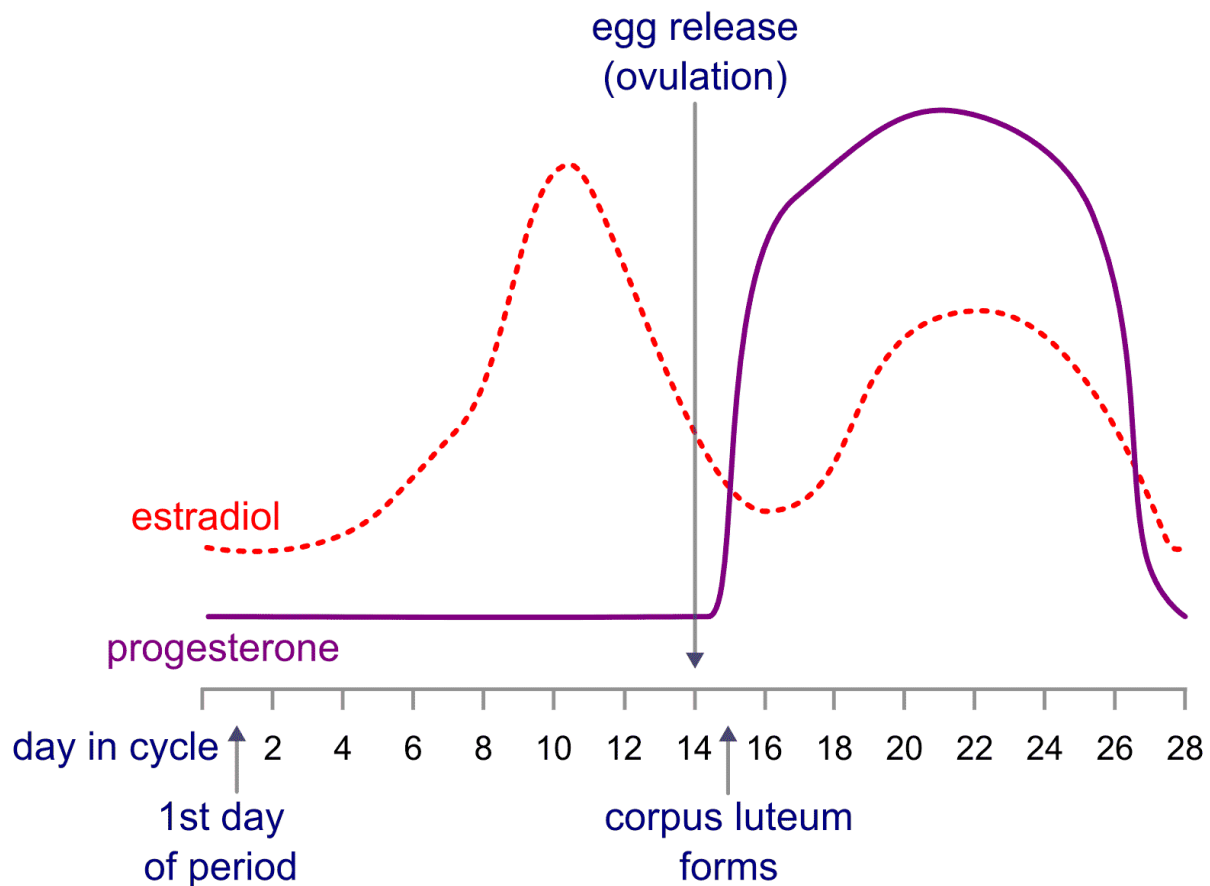


image 7 - menstrual cycle estrogen/progesterone levels

Progesterone counterbalances estrogen. It is the yin to estrogen's yang. For example, progesterone thins your uterine lining, while estrogen thickens it. Progesterone prevents breast cancer [\[68\]](#), while estrogen promotes it. Progesterone boosts thyroid hormone, while estrogen suppresses it. Progesterone's stimulating effect on thyroid [\[69\]](#) is how it raises your body temperature in your luteal phase.



By thinning your uterine lining, progesterone can lighten your period.

Progesterone has many other benefits (I call them superpowers).

- Reduces inflammation [\[70\]](#)

- Builds muscles [\[71\]](#)
- Promotes sleep [\[72\]](#) [\[73\]](#)
- Protects against heart disease [\[74\]](#)
- Calms the nervous system and makes it easier to cope with stress [\[75\]](#)

Progesterone calms the nervous system because it converts to a *neurosteroid* called allopregnanolone (ALLO).



allopregnanolone (ALLO)

Allopregnanolone is a calming neurosteroid that acts like GABA in your brain.



gamma-Aminobutyric acid (GABA)

GABA is a neurotransmitter that promotes relaxation and enhances sleep.

One of the worst things about hormonal birth control is that it robs you of the calming, mood-enhancing effects of progesterone and allopregnanolone. Remember, the progestin drugs in hormonal birth control are *not* progesterone. Progestins do *not* convert to calming allopregnanolone, which could be why they cause anxiety and alter the shape of your brain [\[76\]](#).

Progesterone has many other benefits, which we'll discuss throughout the book. *When it comes to healthy periods, it's mostly about progesterone.*

Anovulatory Cycles

Sometimes, none of your follicles reach the ovulation finish line. You do not ovulate, so you do not form a corpus luteum, and you do *not* make progesterone. But you can still bleed. Why? Because your follicles still make estrogen as they grew and tried to ovulate. And remember, estrogen stimulates fertile mucus and thickens your uterine lining. And, eventually, that uterine lining will have to shed.

Anovulatory cycles are not true menstrual cycles with all the steps of ovulation, corpus luteum, and a luteal phase. Instead, they're like one long continuous follicular phase interspersed with bleeding.

With an anovulatory cycle, you have *unopposed estrogen*, which means you have estrogen, but no progesterone.

Anovulatory cycles are common with PCOS (Chapter 7) and perimenopause (Chapter 10), but they can occur occasionally at any time [77].

Finally, anovulatory bleeds are the kind of bleed you get with the implant and injection methods of hormonal birth control because they suppress ovulation, but permit estrogen. They're different from pill bleeds which are drug withdrawal bleeds from synthetic estrogen and progestin.



Take the pill? Then you have no follicular phase, no ovulation, no corpus luteum, no luteal phase, and no progesterone.

Lifespan of Your Corpus Luteum

If you become pregnant, then your corpus luteum will survive three months until your placenta takes over the job of making progesterone. If you do not become pregnant, then your corpus luteum has the tiny lifespan of a butterfly. It will survive only 10 to 16 days, which is what defines your luteal phase. That is why (unless you are pregnant), your luteal phase can never be more than 16 days.

Your corpus luteum and progesterone are like beloved friends who come but rarely stay. You enjoy their company for a precious two weeks, and then they're gone again.

At the end of your luteal phase, your corpus luteum shrinks and your progesterone drops. That stimulates your uterus to contract and shed its lining.

The Grand Finale: Your Period

If you had a healthy corpus luteum and made enough progesterone, then your uterine lining should be in good shape. For example, it should be well-

formed and not too thick or inflamed and should be fairly easy to shed.

With enough progesterone, your period will arrive smoothly, with no premenstrual spotting or pain.

Here are some things to understand about the bleed itself.

Menstrual fluid is not all blood

Menstrual fluid contains some blood, but also cervical mucus, vaginal secretions, and bits of the uterine lining (endometrial tissue). Interestingly, two-thirds of your endometrial lining is not shed but is reabsorbed by your body.

Your menstrual fluid should be mostly liquid, with no large clots

As your uterine lining breaks away and sheds, your body releases natural anticoagulants to thin it and help it to flow more easily. If you flow heavily, then you may form a few clots because the anticoagulants do not have time to do their job. Menstrual clots are normal, but they should be few and fairly small: about the size of a dime (1.8 cm).

Your menstrual fluid should be a reddish-brown color

Blood turns darker when it's exposed to air, so your period will be a bright red color when you're flowing quickly and bit darker when you're flowing slowly or just spotting. Your menstrual fluid will look almost brown when it has been on your sanitary pad for a while.

You should lose about 50 mL

You should lose a total of 50 mL (or about three tablespoons) of menstrual fluid over the days of your period. Less than 25 mL is scanty flow. More than 80 mL is heavy flow. Of course, you've probably never measured the actual volume of your menstrual flow. You can estimate your flow by counting the number of menstrual products. One soaked regular pad or tampon holds 5 mL or about one teaspoon. A super tampon holds 10 mL. So, 50 mL equates to 10 fully soaked regular tampons or five fully soaked super-tampons, spread over all the days of the period. If your menstrual product is not filled, please adjust the count. For example, a half-filled regular tampon equates to about 2.5 mL.

In simple terms, you shouldn't need to change your pad or tampon more frequently than once every two hours during the day. Your flow should slow during sleep, so you shouldn't need to be up in the night changing a pad.

Your period should last anywhere between two to seven days

Most women bleed for about three to five days, including a day or two of light spotting as it finishes up.

Count the first day of your heavy flow as “day 1”

It doesn't matter how many days of bleeding you have. “Day 1” is the first day of your heavy flow and the beginning of your follicular phase. That's when your FSH starts to rise again, and your next batch of ovarian follicles start their final race toward the ovulation finish line.

Counting “day 1” to “day 1,” your period should come every 21 to 35 days

As we discussed at the beginning of this chapter, a healthy menstrual cycle consists of a follicular phase of anywhere from 7 to 21 days, followed by a luteal phase of between 10 to 16 days. That adds up to a normal menstrual cycle of 21 to 35 days for adults and 21 to 45 days for teenagers.

Special Topic: Why Do We Have Periods?

Blood loss every month seems a waste of resources and nutrients and most other animals simply reabsorb their uterine lining if they don't conceive. Human periods are unique, and scientists think it's something to do with the vigorous and metabolically active nature of the human fetus. To host a such a fetus, we need an exceptionally thick uterine lining compared to other animals. Our uterine lining is therefore too thick to completely be reabsorbed and must be shed.

Menstrual Products

You need some way to collect and dispose of your menstrual fluid.

Menstrual Pads

Disposable menstrual pads are the oldest technology. They are made from absorbent cotton and adhere to the inside of your panties. Pads are

more user-friendly than tampons or cups, and they're a good choice when you're young and have just started menstruating. Pads come in different sizes and absorbencies, from light pads for light days to substantial pads for heavier flow. You can use a pad on its own, or together with a tampon to catch the overflow. To prevent bacterial growth, you should change your pad every six to eight hours. Pads aren't suitable for swimming or some types of exercise.

Reusable menstrual pads are made of cloth so they can be washed and reused.

Tampons

Tampons are a bundle of absorbent material that you insert into your vagina. They're more comfortable than pads and can be used during exercise or swimming. Tampons come in different sizes and absorbencies and are usually made of cotton alone, or cotton and rayon combined. Please choose 100 percent cotton tampons, because shreds of rayon can cause vaginal irritation. To prevent bacterial growth, you should change your tampon every two to six hours.

Special Topic: Toxic Shock Syndrome

Toxic shock syndrome (TSS) is a serious condition caused by a bacterial toxin. Some cases were linked to high-absorbency tampons, particularly to a brand called Rely in 1978. Rely used the absorbent materials carboxymethylcellulose (CMC) and compressed beads of polyester, which unfortunately grew bacteria. Those products were eventually pulled from the market.

TSS is rare with modern tampons. It is estimated to affect three out of every 100,000 tampon users per year.

Menstrual Cup

A reusable menstrual cup is a little cup you insert into your vagina. It's soft silicone or natural rubber so you can fold it before and during insertion.

After insertion, it springs open to form a seal against your vaginal wall and collect your menstrual fluid. You can leave a cup in place for up to 12 hours. To remove it, simply pinch the base to release the seal and then empty the cup into the toilet. Wash it with water and gentle soap, and then reinsert.

A menstrual cup is reusable, so it saves you money and is better for the environment. It's also a good choice for heavy periods because it doesn't leak and it holds more than a tampon. The average menstrual cup holds about 30 mL, which is equal to about three super-tampons. Finally, it's healthier because it doesn't dry out the mucus membrane of your vagina.

Periods Over All of Your Lifetime

Your period probably started when you were about 12 or 13. The average age is 13, but anywhere between 10 and 16 is normal. Your period may have been irregular or heavy for the first few years, but that was just your body finding its way. As we saw with Christine's story in Chapter 1, too many girls are put on the pill to "regulate their periods," when all they need is a little more time.

By the time you reach your reproductive years (age 20 to 45), your ovulation and menstruation should be fairly regular.

For about ten years before menopause, you will be in perimenopause, and your periods will start to change. They will become shorter or longer; heavier or lighter. You will make more estrogen than ever before and at the same time a lot less progesterone. It's a tricky time. Many of the strategies discussed throughout the book are helpful for perimenopause, but we'll also look at some specific strategies in Chapter 10.

Your periods will stop with menopause. The normal age range for menopause is anywhere between 45 to 55. The average age is 50.

If menopause occurs earlier than age 40, it is *premature menopause*.

If menopause occurs due to surgical removal of your uterus and ovaries (total hysterectomy), it is called *surgical menopause*.



hysterectomy

Hysterectomy is the surgical removal of the uterus. Surgical removal of both the uterus and the cervix and possibly the ovaries is called *total hysterectomy*. Surgical removal of the uterus, but not the cervix or the ovaries, is called *partial hysterectomy*.

Removal of the uterus does not cause menopause. If you still have ovaries, then you still ovulate and make hormones. You may still benefit from many of the treatments in this book..

Period Tracking

You should now have a pretty good idea of what you can expect from your period. Your cycle should be 21 to 35 days with two to seven days bleeding. You should see fertile mucus and ovulate, and then progress to a moderate, painless bleed.

You now have some data for your period app or menstrual cycle diary:

Period tracking 101:

- First day of your heaviest day of bleeding (“day 1” of your cycle)
- Number of days between “day 1” and your next “day 1” (length of your cycle)
- Number of days of bleeding
- Amount of blood (menstrual fluid) lost
- Cervical fluid
- Pain

How is your monthly report card looking? If it’s different from what I described in this chapter, then you need treatment. Please read on.

Chapter 5



What Can Go Wrong with Your Period?

Looking for Clues

Now that you've had a good look at how your period *should* be, you can start to think about how it *really* is. Is it regular? Is it heavy? Is it painful? These are your clues. How can you interpret them?

Let's take a closer look at your monthly report card.

Do You Ovulate?

As you learn to interpret your period clues, please always come back to this one essential question: Do you ovulate?

Knowing *if* and *when* you ovulate is the best way to understand your period. That will tell you if and when you make progesterone, which as we've seen, is an essential hormone for period health.

If you discover that you do **not** ovulate, then your next step is to figure out why not—and what you can do to fix that.

How do you know if you ovulate? As we saw in Chapter 3, signs of *possible* ovulation include fertile mucus, a positive urine ovulation stick, and a regular cycle. Evidence of definite ovulation includes a *rise in waking temperature* and an increase in progesterone as measured by a mid-luteal phase blood test to be discussed later in this chapter.



Your period app may indicate ovulation, but it's only guessing. To truly *know* if and when you ovulate, you need to track your temperature as described in the [Fertility Awareness Method](#) section of Chapter 3.

A period is *not* a definite sign of ovulation because, as you may recall from the last chapter, it could have been an *anovulatory bleed*. An anovulatory cycle is like a continuous follicular phase followed by breakthrough bleeding.

You know you've had an anovulatory cycle if your temperature does *not* go up in the two weeks before your period. It's okay to have the occasional

anovulatory cycle because they're actually pretty common even in healthy women [78]. An anovulatory cycle is only a problem if that's all you have. In other words, if you *never* ovulate.

Keeping the question of ovulation always in mind, let's now consider some common period problems.

No Periods or Irregular Periods

An absence of periods is called *amenorrhea*. More precisely, an absence of periods when you used to have them is called *secondary amenorrhea*, which is what we'll be discussing here. You could also have something called *primary amenorrhea*, which means you have never had a period. That is beyond the scope of this book. If you are aged 16 or older and have *never* had a period, then please see your doctor.



primary amenorrhea

Primary amenorrhea means you have never had a period.



secondary amenorrhea

Secondary amenorrhea means you used to have periods, but they have stopped.

Pregnancy

First of all—and not to be overlooked—your lack of periods could simply mean pregnancy. It's an obvious possibility if you've had regular periods, and they then stop. It's a less obvious possibility (but still possible) if you have not had periods. For example, perhaps you have not had a period for many months after coming off the pill. You could still be pregnant. Maybe you did a pregnancy test a few months ago, and it was negative, and you have not had a period since. You could still be pregnant.

How could it happen? Remember, first you ovulate, and *then* you bleed two weeks later. If you have not been ovulating, but then you *do* ovulate, you could become pregnant on that very first ovulation. In that case, you could be pregnant without ever seeing a period.

If you have no periods or irregular periods (and you want to avoid pregnancy), then you must continuously use a barrier method of contraception. You cannot rely on the fertility awareness method of contraception because you cannot yet predict when you will ovulate.



No periods? Don't forget to rule out pregnancy, even if you have not seen a period for many months.

Another confusing thing is that light bleeding is a common symptom of early pregnancy. Take care that you do not mistake that for a strangely light period. If in doubt, do a pregnancy test.

Menopause Transition or Perimenopause

Your lack of periods could be the beginning of menopause.

The timing of menopause is for the most part genetically programmed. You cannot delay menopause with the pill or any natural treatment. If you want to know when your periods might stop, ask your mother, aunts, or older sisters when *their* periods stopped. You will likely be the same.

If you are younger than 40, then your lack of periods is probably not menopause. Only 1 in 100 women undergo premature menopause or *primary ovarian insufficiency*. Your doctor can easily rule out menopause with a blood test called follicle stimulating hormone (FSH). If your FSH is higher than 40 IU/L on two occasions a month apart, then you are beginning the menopause transition. Please see Chapter 10.



FSH

FSH (follicle stimulating hormone) is a pituitary hormone that stimulates your ovaries.

Stress or Illness

Emotional or physical stress, illness, trauma, or surgery are all common reasons to miss a period or two. It happens when your hypothalamus, which is the command center of your hormones, makes the executive decision to temporarily suppress reproduction and halt your period. It's a smart strategy because stress could mean you're in a dangerous situation such as illness or war, which would not be a good time to make a baby. You're probably not in a war, but your hypothalamus doesn't know that. When this kind of menstrual suppression becomes chronic, it is called *hypothalamic menstrual cycle disturbance* or *hypothalamic amenorrhea* (HA), which we'll cover in Chapter 7.



hypothalamus

The hypothalamus is the part of the brain just above the pituitary gland. It sends messages via the pituitary to all the other endocrine glands including ovaries, thyroid, and adrenal glands.

Undereating

Undereating is another kind of stress that can stop your periods and cause hypothalamic amenorrhea. Again, it's a smart decision by your hypothalamus because if you're not eating enough, then it could mean you're in a famine and would have a hard time making a baby. This is true even if you don't want a baby. From your body's perspective, having a healthy period is fundamentally about being healthy and nourished enough to reproduce.

Undereating can stop periods—even if you are a healthy body weight.

We used to think that amenorrhea occurred below a certain body weight or body mass index (BMI). We now understand that the hypothalamus cares less about body weight and more about whether you're eating enough to keep up with your activity. This is called *energy availability* and is the ratio between energy intake, body mass, and energy expenditure or exercise [\[79\]](#).

So, you can be normal weight or even slightly *overweight* and still lose your period to undereating.



body mass index (BMI)

Your BMI is your weight in kilograms divided by the square of your height in meters. A normal BMI is between 18.5 and 24.9.

Too few calories can trigger a *starvation response* in your hypothalamus that disrupts luteinizing hormone (LH) and shuts down ovulation. Too few carbohydrates (but enough calories) can do the same thing [\[80\]](#). You can, therefore, lose your period to a low-carb diet.



Zarah: Have you lost your period to a low-carb diet?

Zarah came to me because she'd not had a period for four months. She was confused because her periods had always been as regular as clockwork.

Her doctor had run all the usual tests and found nothing abnormal. "I don't understand it," said Zarah. "I eat super healthy. Actually, healthier than ever before."

The phrase "super healthy" caught my attention.

"How healthy?" I asked.

As it turned out, Zarah and her boyfriend had been "eating clean" for the last ten months on the advice of Sam's personal trainer. They started each morning with a green smoothie and then limited their other two meals to meat and non-starchy vegetables. Sam was doing very well. He'd lost 10 centimeters around his waist and had never felt better.

Zarah had lost some weight too, but not too much. She assured me that she was getting enough to eat and I believed her. She ate plenty of high-calorie foods such as meat and avocado and eggs and butter. She just wasn't eating enough starchy foods.

"You need more carbs than your boyfriend," I said. "As a woman, you need a certain amount of carbohydrate to be able to ovulate and have a period."

I reassured Zarah that she did not need to eat "bad carbs," like sugar and flour, but she did need to eat rice or potatoes every day. Somewhat

reluctantly, Zarah reintroduced starch, and then three months later, she got her period.

Did you notice that Zarah's period didn't come back right away? It took three months because the ovarian follicle takes a hundred days on its journey to ovulation.

Some women need quite a lot of carbohydrate to ovulate. Some need less. It all depends at what point the starvation response is triggered in your hypothalamus.

Medical Conditions

Lack of periods or irregular periods can be caused by medical conditions such as celiac disease (gluten sensitivity) or thyroid disease. We'll discuss thyroid disease in a few places in the book, including a special section in Chapter 11.

Final Diagnosis

After all the other things have been ruled out, your doctor will most likely give you the diagnosis of [polycystic ovarian syndrome \(PCOS\)](#) or [hypothalamic amenorrhea](#).

Just a comment about diagnosing PCOS. The condition *cannot* be diagnosed or ruled out by pelvic ultrasound. In other words, you could have a *normal* ultrasound but still have the hormonal condition PCOS. Please see Chapter 7.



ultrasound

A pelvic ultrasound is an imaging study to view your ovaries and uterus. It uses sound waves (not radiation) and is safe, noninvasive, and painless.

Late Periods

Your period should come at least every 35 days. If it comes later, then you've had a long cycle. Long cycles are a type of irregular period. They indicate either an anovulatory cycle or a very long follicular phase. They do not indicate a long luteal phase because that is not possible. Unless you're pregnant, your luteal phase can never be longer than 16 days. You can have the combination of a long follicular phase and a short luteal phase. That's why it's so helpful to know if and when you ovulate.

A long follicular phase can occur at any age. If you're younger than 45, it is probably because of stress, illness, undereating, or polycystic ovarian syndrome (PCOS). If you're older than 45, your long follicular phase could be thyroid disease, PCOS, or the final transition to menopause.



If you've always had cycles longer than 35 days you probably have PCOS. Up to 50 percent of PCOS-sufferers are not aware they have the condition [\[81\]](#).

Early Periods

Your period should come no sooner than 21 days. If it does, then you've had a short cycle. Like long cycles, short cycles are a type of irregular period. They indicate either an anovulatory cycle, a short follicular phase, or a short luteal phase.

A short follicular phase is most common during perimenopause. It happens then because your pituitary starts making more follicle stimulating hormone (FSH), which speeds up the race to ovulation. More FSH will also cause you to make more estrogen than you did when you were younger.

Early in perimenopause, you will probably have a short follicular phase. Later in perimenopause, you may swing to having a long follicular phase interspersed with a short follicular phase.

Short Luteal Phase

As discussed in Chapter 3, you can measure the length of your luteal phase by tracking the rise of your basal body temperature. When you see a rise in temperature for at least three consecutive days, then you ovulated *at*

the start of that rise. With a healthy corpus luteum, you will then see 11 to 16 days high-temperature days between ovulation and the first day of your period.

If you do not see a consistent rise in temperature, then you did not ovulate. If you go on to bleed, then you had an anovulatory cycle.

If you see a temperature rise, but it lasts fewer than 11 days, then you had a short luteal phase.

A short luteal phase can be caused by many of the same things that cause lack of periods, stress being the most common. The severity of stress-induced menstrual disturbance ranges from a short luteal phase as the mildest version. Followed by anovulatory cycles as more severe, and then infrequent cycles and amenorrhea as the most severe menstrual disturbance [\[82\]](#).

A short luteal phase results in low progesterone.

Low Progesterone

There are two kinds of low progesterone.

1. With an anovulatory cycle, you make no progesterone at all—at least for that cycle.
2. With a short luteal phase, you make a less than optimal amount of progesterone.

How do you know if your progesterone is less than optimal? Symptoms of low progesterone include no luteal phase or a short luteal phase, fertile mucus during the premenstrual phase, PMS, premenstrual bleeding or spotting, and prolonged or heavy menstrual bleeding.

Testing for low progesterone

You can ask your doctor to measure progesterone with a blood test. The best day to test is in the *middle* of your luteal phase which is sometimes called a “day 21” progesterone test. Of course, your mid-luteal day may not be day 21. It depends on the length of your cycle. For example, if you have a 21-day cycle, then your mid-luteal day is approximately day 14. If you have a 35-day cycle, then your mid-luteal day is approximately day 28. By definition, your mid-luteal day is approximately seven days *after* ovulation and seven days *before* your next expected period.



Your doctor may not know when to test progesterone.

If you test progesterone at the right time (after ovulation), then it should be at least 3 ng/mL (9.5 nmol/L) [\[83\]](#). If it's below that, then you either *did not ovulate*, or you tested at the wrong time. Please do not interpret your progesterone result until your period comes. Wait for your period, and then ask: "Was the test done within the 14 days before my period?" If not, the test is meaningless.

A good progesterone reading is 10 ng/mL (30 nmol/L), and it can be much higher. In fact, *the higher, the better*. But please don't worry too much if it's a bit on the low side. Progesterone fluctuates widely in bursts ninety minutes apart so a low-normal reading may simply mean that your sample was taken at a low point between bursts.

There is also an in-home urine test for progesterone. Please see the Resources section.



Take hormonal birth control? There's no point testing progesterone because you have none.

Charting your waking temperature is another, equally scientific way to measure your progesterone. If you see a consistent temperature rise and a luteal phase of at least 11 days, then you *know* you made enough progesterone.

Special Topic: Roadmap to Progesterone

You probably want more progesterone, and if so, you're not alone. Low progesterone is associated with PCOS, heavy periods, fibroids, acne, hair loss, premenstrual syndrome (PMS), and perimenopause. This entire book is about boosting progesterone because this entire book is about *ovulating*. Healthy ovulation is *how* you have a regular cycle. It's also how you make progesterone.

Healthy ovarian follicles → healthy ovulation → healthy corpus luteum → more progesterone.

And remember, your ovarian follicles need to be healthy for *all* of their hundred-day journey to ovulation. If they're unhealthy for *part* of their journey, the result will be low progesterone months later.



When it comes to progesterone and period health, it's all about ovulation.

Heavy Periods or Heavy Menstrual Bleeding

A heavy period is blood loss greater than 80 mL or lasting for more than seven days. 80 mL equates to 16 fully soaked regular tampons or eight fully soaked super-tampons, spread over all the days of your period.

Prolonged bleeding

If you flow for more than seven days, you almost certainly had an *anovulatory cycle*. That can occur with PCOS (Chapter 7) or perimenopause (Chapter 10).

Menstrual clots

When menstrual flow is heavy, your body's natural anticoagulants don't have time to keep up with the flow, and so you will see menstrual clots. A few clots are fine, but if you regularly see clots larger than a quarter (2.4 cm), then please see your doctor.

What causes heavy menstrual bleeding?

Heavy menstrual bleeding and large menstrual clots can be caused many things, including the copper IUD, anovulatory cycles, endometriosis, perimenopause, thyroid disease, and coagulation disorders. We'll discuss those conditions in the later chapters.

The most common cause of heavy periods is a *hormonal imbalance* which is a combination of 1) low progesterone (discussed above) and 2) estrogen excess.

Estrogen Excess

How do you know if you have estrogen excess? Symptoms include heavy periods, breast tenderness, short cycles, PMS, and fibroids.

You can ask your doctor to measure estradiol with a blood test. I recommend you have the blood test in the *middle of your luteal phase*. That way, you can assess progesterone at the same time. At its highest point, your blood level of estradiol should not exceed 270 pg/mL or 1000 pmol/L. If it does, then you have too much estrogen. As you interpret your result, please understand that estradiol fluctuates greatly throughout your cycle, and even throughout the day. It's lowest on day 3 of your period. It's highest about four days before ovulation (day 10 in a standard cycle), and then again in the middle of your luteal phase (day 21 of a standard cycle).

Special Topic: Estrogen Dominance

Estrogen dominance means you have too much estrogen and not enough progesterone. Most commonly, estrogen dominance describes estrogen excess (as discussed in this section), but it can also refer to a situation of normal estrogen, but low progesterone.

I do not use the term estrogen dominance, because I prefer the more precise terms of *estrogen excess* and *low progesterone*. You can suffer both problems simultaneously.

The term estrogen dominance is popular, but it is not recognized by conventional doctors. For that reason, I recommend you not refer to “estrogen dominance” when speaking with your doctor (see the [How to Talk to Your Doctor](#) section in Chapter 11).

Estrogen excess is caused by a combination of 1) higher production by your ovaries, and 2) impaired metabolism or detoxification. Higher production by your ovaries usually only occurs during perimenopause, which we'll discuss in Chapter 10. Impaired estrogen metabolism or detoxification can happen anytime.

Estrogen Metabolism

Estrogen metabolism is the healthy removal or detoxification of estrogen from your body. It's a two-step process.



estrogen metabolism

Estrogen metabolism is the healthy removal or detoxification of estrogen from the body.

First, your liver inactivates estrogen by attaching a little molecule or “handle,” which is called *conjugation*. To do that effectively, your liver needs a good supply of nutrients such as folate, vitamin B6, vitamin B12, zinc, selenium, and protein. Your liver also needs to be relatively free from the toxic effects of alcohol or endocrine disrupting chemicals.



Women who consume more than one drink per day have measurably higher blood levels of estrogen.

Special Topic: Endocrine Disrupting Chemicals

Endocrine disrupting chemicals (EDCs), or endocrine disruptors, are the many different industrial chemicals that interfere with hormone action and metabolism. Common endocrine disruptors include pesticides, solvents, fire retardants, mercury, and plastic softeners such as bisphenol A (BPA). These chemicals can impair the healthy metabolism or detoxification of estrogen. They also alter hormone levels and interfere with hormone receptors.

EDCs have been linked with an increased risk of disorders such as polycystic ovarian syndrome and endometriosis. Please see the [Environmental Toxins](#) section in Chapter 11.

The second step of estrogen metabolism or detoxification is the elimination of conjugated estrogen through your bowel. It requires you to

have healthy intestinal bacteria or a healthy gut *microbiome*.



microbiome

The genetic material of the microorganisms in a particular environment such as the body or part of the body.

When healthy bacteria are present in your gut, they assist with the safe removal of conjugated estrogens out through your stool. When unhealthy bacteria are present, they impair estrogen metabolism by making an enzyme called *beta-glucuronidase*, which de-conjugates and re-activates estrogen. The re-activated estrogen is then reabsorbed into your body in a process called *enterohepatic recirculation* or “gut-liver recirculation.” It can cause estrogen excess.

To prevent estrogen excess, you want to maintain healthy gut bacteria. One of the best ways to do that is to avoid as much as possible drugs such as antibiotics that damage gut bacteria. See Chapter 11 for more information about the gut microbiome.

Hypersensitivity to Estrogen

It is not just how much estrogen you have, but how *sensitive to it* you are. For example, you can be *hypersensitive* to estrogen when you have chronic inflammation or when you are *deficient in the mineral iodine* [\[84\]](#). Replacing iodine can be a helpful treatment for estrogen excess symptoms such as heavy periods, breast pain, and more.

We’ll look at the treatment of estrogen excess and heavy menstrual bleeding in Chapter 9.

Light Periods

A light or scanty period does not necessarily mean that something is wrong. You can lose as little as 25 mL of menstrual fluid, and that is still normal. 25 mL equates to 5 fully soaked regular tampons, spread over all the days of your period.

If you see less than 25 mL of menstrual fluid, then ask yourself: Is it a true period or is it an anovulatory cycle? Remember, a true period is one that follows a follicular phase, ovulation, and luteal phase.

If you are confident that you *do* ovulate, then things are going pretty well with your periods, despite your scanty flow. You have enough estrogen, or you would not be able to reach ovulation. You just don't have as much estradiol as most women, which can be the result of things that lower estrogen such as smoking, undereating, or too much soy or other phytoestrogens in your diet. For information about phytoestrogens, please see the [Soy](#) section in Chapter 6 and [Sam's patient story](#) in Chapter 9.



It's normal for estrogen to be *very low* on day 2 or 3 of your cycle.

If you find *no* evidence of ovulation or a luteal phase, then you are not ovulating, and that's the significant thing about your light period. The solution is not to boost estrogen but to *restore regular ovulation*. That probably means reducing stress or eating more or correcting a condition such as polycystic ovarian syndrome (PCOS). Please see Chapter 7.

Pain

Pelvic pain is an important clue on your period report card. It can mean lots of different things—anything from benign run-of-the-mill period pain to more serious conditions such as infection and endometriosis. Let's have a look.

Period Pain

Normal period pain (primary dysmenorrhea) is a bit of cramping in your lower pelvis or back. It's also called menstrual cramps and occurs just before your period or on the first day or two of your period. It improves with ibuprofen and does not interfere with your daily activities.

Normal period pain is caused by the release of prostaglandins in your uterus. Having more estrogen and less progesterone can result in a higher

level of prostaglandins and more period pain [\[85\]](#).

Normal period pain usually improves after a pregnancy and as you get older. And normal period pain should *disappear* with the diet changes and supplements discussed in Chapter 9. Put it this way: If it doesn't disappear, then it's not normal period pain. It's *severe* period pain.



dysmenorrhea

Dysmenorrhea is the medical term for painful menstruation.



prostaglandins

Prostaglandins are hormone-like compounds that have a variety of physiological effects, such as the constriction and dilation of blood vessels.

Severe period pain (called secondary dysmenorrhea) is throbbing, burning, searing, or stabbing pain that lasts for many days and can occur between periods. It doesn't improve with ibuprofen, and it's so bad you vomit and sometimes miss school or work.

Severe period pain is caused by an underlying medical condition such as endometriosis or adenomyosis, which we'll discuss in Chapter 9. It can get worse as you get older.



adenomyosis

Adenomyosis is a painful condition in which endometrial tissue exists and grows within the muscular wall of the uterus.

Special Topic: A Missed Diagnosis

Endometriosis is a condition in which bits of tissue that are *similar to the endometrium* (uterine lining) grow in places other than inside your uterus. It is a very common condition and affects up to one in ten women. Unfortunately, endometriosis is not easy to diagnose. For example, endometriosis *cannot* be diagnosed by ultrasound. You could have a perfectly normal ultrasound and still have the disease. Also, many doctors mistakenly believe that endometriosis does not affect young women and so fail to mention it as a possibility. That's why it typically takes up to ten years to diagnose.

Do not let that happen to you. Don't suffer a decade of crippling pain and be told that it's "just period pain," and there's nothing you can do about it.

Please read the Endometriosis section in Chapter 9, and then speak to your doctor. Tell her how many painkillers you take, and ask her outright if you should speak to a gynecologist about endometriosis.

Pain During Sex

A rubbing or friction pain during intercourse is common and probably means you do not have enough lubrication which can be the result of stress or not being aroused. If you are approaching menopause, then vaginal dryness can be the result of low estrogen. Please see Chapter 10.

Pain during intercourse can also be a sign of mild vaginal infection such as vaginosis or yeast infection (see below).

Deep, stabbing pain during sex is more serious and can be a sign of an ovarian cyst, endometriosis, adenomyosis, or an infection. Please see your doctor.

Pain from Infection (Pelvic Inflammatory Disease)

Pelvic infections are usually caused by sexually transmitted disease, but they can be caused by other types of infections. Some infections cause constant pain and fever, but some cause only occasional pain, or itchy, bad-smelling discharge. Some infections (such as chlamydia) cause *no*

symptoms, which is why you should be screened for chlamydia if you are sexually active.

Do not ignore a possible pelvic infection because if left untreated, it can lead to complications and infertility. If you think you might have an infection, then please see your doctor. You may require antibiotics.

Mid-Cycle Ovarian Pain

A little pain with ovulation is normal because your egg has to rupture out the side of your ovary, and that is a mildly violent event. Normal ovulation pain feels like a little twinge in your lower pelvis. It should be brief (an hour or two). It should not interfere with your routine, and you should not need a painkiller. It is called *mittelschmerz*, which is German for “middle pain.”

You may experience stronger ovulation pain if it has been some time since you last ovulated such as might occur if you’ve just come off the pill or are recovering from polycystic ovarian syndrome (PCOS). In that case, you can expect your first ovulation or two to be painful, but the pain should then subside in your subsequent cycles.

If you experience severe pain with ovulation, then you may have an infection, ovarian cyst, adenomyosis, or endometriosis. Please see your doctor.

Ovarian Cysts

Your ovaries are filled with ovarian follicles, and follicles are essentially small, normal “cysts” (although they’re not usually called that). Every month, those normal cysts grow, burst, and are reabsorbed. Occasionally, there is a glitch, and one of your follicles becomes abnormally large and fluid-filled, forming an abnormal ovarian cyst.

There are many different types of ovarian cysts. They may be symptomless, or they may cause pain. They may be hormonally neutral, or they may release estrogen and disrupt your menstrual cycle. Most of the time, ovarian cysts are benign and resolve on their own. Very occasionally, they may require surgery.

The multiple small “cysts” of polycystic ovarian syndrome (PCOS) are something a bit different. They are not abnormally large follicles. Instead, they are abnormally *small* follicles that are in a state of partial development.

For more information about the types of ovarian cysts and their treatment, please see Chapter 9.

Abnormal Vaginal Discharge or Cervical Fluid

As we saw in the last chapter, it's normal to see white stuff in your underwear. Normal vaginal discharge is white or light yellow and has a mild salty odor. You will probably also see a few days of the clear, slippery fertile mucus we discussed in the last chapter.

No Fertile Mucus

What if you do not see fertile mucus? Does that mean you did not ovulate? Not necessarily. You might be producing a small amount of fertile cervical fluid, but not enough to notice it unless you actively check for it. Or you might have difficulty detecting it because of a yeast infection or bacterial vaginosis (see below).

Abnormal Timing of Fertile Mucus

What if you see fertile mucus more than once? This kind of stop-and-start fertile mucus can be easily mistaken for more than one ovulation, but that is *not* what is happening. You can ovulate only once, and you can detect that with by your rise in basal body temperature. Stop-and-start fertile mucus happens when you have a long, drawn-out follicular phase and a stuttering attempt to stimulate ovulation.

You can also see fertile mucus but then never actually ovulate. That is an anovulatory cycle.

Finally, you can see fertile mucus *after* ovulation. It doesn't mean you're going to ovulate again. It means you did not make enough progesterone to dry up the fertile mucus.

Yeast Infections or Bacterial Vaginosis

If you have itchy or bad-smelling discharge, please see your doctor. You may have an infection and require antibiotics.

If your doctor says you have a yeast infection or bacterial vaginosis, then it's time to think about your vaginal *microbiome*. Earlier in this chapter, we discussed the gut microbiome which are the good bacteria living in your intestine. In reality, you have good bacteria living everywhere including your gut, lungs, skin, and, of course, your vagina.

One of the many benefits of the vaginal microbiome is to protect you from the overgrowth of unwanted yeast and bacteria. If yeast or unwanted bacteria get the upper hand, then you have a yeast infection or bacterial vaginosis. Bacterial vaginosis may be best described as an “ecological disorder of the vaginal microbiome.” [86]



bacterial vaginosis

Vaginosis is an overgrowth of one or more species of normal vaginal bacteria.

To maintain a healthy vaginal microbiome, you want to avoid as much as possible those things that disrupt good bacteria, including antibiotics, hormonal birth control, and the use of a vaginal douche or wash.

For more information and treatment of yeast infections and bacterial vaginosis, please see the [Gut Microbiome](#) and [Yeast Infection](#) treatment sections in Chapter 11.

Bleeding Between Periods

Mid-Cycle Bleeding

Light spotting on the day of ovulation is common and normal. It's caused by a mini-estrogen withdrawal as your estrogen dips after its pre-ovulation surge. Ovulatory spotting is more likely if you have lower than average (but still normal) estrogen.

Is it mid-cycle spotting or a light anovulatory bleed?

What you experience as bleeding “between” periods may simply be the random breakthrough bleeding of an anovulatory cycle. Remember the central question when it comes to period health: “Do you ovulate?”

Knowing if and when you ovulate will help you to understand that pattern of your bleeding.

Mid-cycle bleeding can also be a sign of a more serious gynecological condition such as uterine fibroids, endometriosis, pelvic infection, or uterine polyps. If you are unsure as to the cause of your bleeding, please see your doctor.



uterine polyps

Uterine polyps or endometrial polyps are outgrowths from the uterine lining (endometrium). They are usually benign or non-cancerous.

Bleeding After Sex

If you notice light bleeding or spotting directly after intercourse, then it's probably from your cervix, which is the opening of the uterus into the vagina. Your cervix can bleed lightly after being tapped by the penis during sex. In most cases, it is normal and harmless. In some cases, it can be caused by inflammation of the cervix or even infection. It can also be caused by cervical polyps or endometriosis. If you have other symptoms, or if you are not sure of the cause of your bleeding, then please see your doctor.

Premenstrual Bleeding

It's common to see a bit of dark-colored spotting in the day or two before your period. It's dark because it's flowing slowly and so had a chance to oxidize in the air. Two days of premenstrual bleeding is normal. If you see spotting for more than two days, then your progesterone may be dropping away too soon, or you have something else going on. For example, premenstrual spotting can be caused by thyroid disease, fibroids, endometriosis or uterine polyps.

“Day 1” of your cycle is the first day of your heavy bleed. The days of premenstrual spotting are the final days of your previous cycle.



Theresa: Two kinds of spotting

Theresa had a lot of spotting when she first came off the pill. She would bleed for a few days, which she thought was her period. Then, just ten days later she would start spotting again for about a week. And then have another period. This went on for six months until she saw her doctor who ordered blood tests and a pelvic ultrasound and said that everything was normal.

I asked Theresa to track her temperatures, and we discovered that she did *not* have a luteal phase temperature rise which meant she was not ovulating. Instead, she was having anovulatory cycles or breakthrough bleeding.

With further testing, we were able to detect that Theresa had high androgens or male hormones, which meant she had polycystic ovarian syndrome (PCOS), a common cause of anovulatory cycles.

I asked Theresa to reduce sugar in her diet and take the herbal medicine combination peony and licorice, which we'll discuss in Chapter 7. Over the next seven months, she started to ovulate and see a nice temperature rise in her luteal phase.

The spotting, however, did not improve, which surprised me very much. Theresa was now ovulating and making progesterone which should have greatly improved the spotting. What was going on?

I asked her to have another pelvic ultrasound.

“But I had an ultrasound over a year ago,” she said. “And it was normal then. I don't see the point of testing again because nothing has really changed.”

But something *had* changed. “You weren't ovulating before,” I said.

“And now you are. So, there must be something new that's masking your improvement.”

Theresa had a second ultrasound which this time showed the presence of a uterine polyp. Her gynecologist removed the polyp, and the spotting

finally stopped.

Premenstrual Symptoms

You may experience a wide variety of symptoms during the week or two before your period. Common symptoms include irritability, headaches, acne, breast tenderness, fluid retention and food cravings. Premenstrual symptoms are clues from your luteal phase, and as we'll see in Chapter 8, they stem from a combination of high estrogen, low progesterone, and inflammation.

Postmenstrual symptoms

Some women notice “postmenstrual” mood changes. In reality, they are almost always symptoms that occur *after* an anovulatory bleed such as commonly occurs with polycystic ovarian syndrome. The solution is to restore regular ovulation (Chapter 7).



Mood symptoms that occur on hormonal birth control are side effects of hormonal birth control. They are not premenstrual symptoms.

Advanced Period Tracking

Now that we've had a good look at what can go wrong with your period, you have more data for your period app.

Advanced period tracking:

- “Day 1” of your cycle
- Length of your cycle
- Days of bleeding
- Quantity of menstrual fluid
- Bleeding between periods (spotting)
- Cervical fluid
- Result of an LH test stick
- Waking temperatures

- Duration of luteal phase
- Pain
- Premenstrual symptoms such as irritability, headaches, acne, or food cravings
- Unusual stress or illness

When to see your doctor:

- No periods
- Cycles that are shorter than 21 days or longer than 35 days*
- Bleeding for more than seven days
- Losing more than 80 mL of menstrual fluid in one period
- Period pain so bad that you cannot do your normal activities
- Pain between periods, especially if it is severe
- Bad-smelling vaginal discharge
- Bleeding between periods that is not ovulation spotting

* Do not talk to your doctor about irregular periods until you have first read Chapter 7.

Menstrual cycle diary

Another tool is the paper charts made available by *The Centre for Menstrual Cycle and Ovulation Research*. They have the *Menstrual Cycle Diary* [\[87\]](#) and the *Quantitative Basal Temperature Method* [\[88\]](#).

Your Period Report Card

A summary of your clues...

No periods at all

Possible significance: Pregnancy, menopause, stress, illness, thyroid disease, celiac disease, polycystic ovarian syndrome (PCOS), functional hypothalamic amenorrhea (FHA), high prolactin.

Late periods

Possible significance: Anovulatory cycle, long follicular phase, stress, illness, thyroid disease, polycystic ovarian syndrome (PCOS), functional hypothalamic amenorrhea (FHA), high prolactin.

Early periods

Possible significance: Anovulatory cycle, short follicular phase, short luteal phase, low progesterone, polycystic ovarian syndrome (PCOS), perimenopause, stress.

Heavy periods

Possible significance: Perimenopause, adolescence, anovulatory cycle, estrogen excess, low progesterone, polycystic ovarian syndrome (PCOS), copper IUD, thyroid disease, fibroids, endometriosis, adenomyosis, coagulation disorders.

Prolonged bleeding

Possible significance: Anovulatory cycle, polycystic ovarian syndrome (PCOS).

Menstrual clots

Possible significance: Heavy menstrual bleeding, low progesterone, perimenopause, thyroid disease, endometriosis, fibroids.

Light periods

Possible significance: Anovulatory cycle, estrogen deficiency, polycystic ovarian syndrome (PCOS), thyroid disease, excess phytoestrogens.

Period pain

Possible significance: Inflammation, zinc deficiency, estrogen excess, low progesterone, copper IUD, endometriosis, adenomyosis, infection.

Pain before periods

Possible significance: Common variant of standard period pain, endometriosis, adenomyosis, ovarian cysts, infection.

Pain during sex

Possible significance: Insufficiency arousal causing lack of lubrication, estrogen deficiency, infection, fibroids, endometriosis, adenomyosis.

Pain from infection

Possible significance: Sexually transmitted disease, yeast infection, bacterial vaginosis.

Mid-cycle ovarian pain

Possible significance: Normal ovulation pain (mittelschmerz), temporarily worsened ovulation pain (during first few cycles off the pill), PCOS, infection, endometriosis, ovarian cysts.

No fertile mucus

Possible significance: No ovulation, estrogen deficiency, yeast infection, bacterial vaginosis.

Abnormal timing of fertile mucus

Possible significance: Anovulatory cycle, long follicular phase, low progesterone.

Yeast infections or bacterial vaginosis

Possible significance: Birth control pill, problem with the gut microbiome, antibiotics, sugar.

Mid-cycle bleeding

Possible significance: Normal ovulation spotting, anovulatory cycle, endometriosis, adenomyosis, uterine polyp, ovarian cysts, infection.

Premenstrual bleeding

Possible significance: Anovulatory cycle, low progesterone, endometriosis, thyroid disease.

Bleeding after sex

Possible significance: Inflammation of cervix, cancer of cervix, infection, endometriosis.

Premenstrual symptoms (PMS)

Possible significance: Estrogen excess, low progesterone, inflammation, stress.

Postmenstrual symptoms

Possible significance: Anovulatory cycle, polycystic ovarian syndrome (PCOS).

PART TWO



Treatment

Healing is a matter of time, but it is sometimes also a matter of opportunity.

~ Hippocrates ~

Chapter 6



General Maintenance for Periods

Welcome to the treatment section of the book. In the coming chapters, I will provide you with targeted treatment strategies for your specific period problem. To get the maximum benefit from those treatments, you must first have some general maintenance.

I know you want to read ahead to the nitty-gritty of your particular period problem, but please don't skip this chapter. *It is the most important chapter in the book.* General maintenance lays the groundwork for all the treatments that come later. If you do not first implement these basic principles, you will not reap the benefits from those targeted treatments.

What is *General Maintenance* for periods? It's all the different things that you can do to soothe, cool, and nourish your body.

Soothe Your Hormonal System

Stress

Stress has a huge impact on period health. For one thing, it directly affects your hypothalamus, which is your brain's hormone command center. Under stress, your hypothalamus reduces its signals to your pituitary, which, in turn, reduces production of FSH and LH—the two hormones that promote ovulation. In simplest terms: Stress leads to reduced pituitary signaling which leads to fewer ovulatory cycles. We'll discuss this more in the Hypothalamic Amenorrhea section in the next chapter.

Cortisol

The problem of stress doesn't stop there. Stress also increases cortisol, which is the stress hormone made by your adrenal glands. Cortisol is a life-saving, *fight-or-flight* hormone that gets you through acute challenges such as infection or danger. It changes your physiology in ways that improve short-term survival such as increasing heart rate and raising blood pressure. Cortisol makes you more alert and increases your blood sugar to provide your muscles with energy. Short-term activation of cortisol is beneficial.

Long-term, chronic activation of cortisol is *not* beneficial. When your cortisol stays high day after day, it steals protein from your muscles and reduces your sensitivity to insulin. It also weakens your immune system and impedes ovulation and ovarian steroid production [89]. And finally, it damages the hippocampus which is the part of the brain that calms the HPA axis. Chronic stress, therefore, leads to dysregulation or *dysfunction* of your hypothalamic-pituitary-adrenal (HPA) axis.

HPA Axis Dysfunction

HPA axis dysfunction or dysregulation is impaired communication between your hypothalamus, pituitary, and adrenal glands. It causes symptoms such as fatigue, anxiety, insomnia, low libido, low blood pressure, salt cravings, poor immunity, brain fog, PMS, and irregular periods.



HPA axis dysfunction

HPA axis dysfunction is a pattern of chronic stress and abnormal regulation of cortisol. It's the correct medical term for what some clinicians used to call "adrenal fatigue" or "adrenal exhaustion."

HPA axis dysfunction is caused by stress and by many other things including sleep deprivation, circadian disruption (jet lag or staying up late), undereating, nutrient deficiency, and illness.

Female hormones *improve* HPA axis function because both estrogen and progesterone stabilize the HPA axis.

So, if you have a problem with ovulation, then it can become a vicious cycle: HPA axis dysfunction causes period problems, which further increase HPA axis dysfunction. The way to start to improve things is to treat HPA axis dysfunction with the strategies discussed here. You may need extra help when your hormones start to change dramatically in your 40s. Please see Chapter 10.

The synthetic progestins in hormonal birth control may worsen HPA axis dysfunction [\[90\]](#).



How to test for HPA axis dysfunction

At this stage, there is no reliable way to assess HPA axis dysfunction. A recent study surveyed all possible methods including salivary cortisol tests and concluded that none are accurate predictors of fatigue or symptoms [\[91\]](#). Better testing methods may become available in the future [\[92\]](#) [\[93\]](#), but in the meantime, I assess HPA axis dysfunction based on symptoms and sometimes a blood test for the adrenal hormone *DHEAS*, which can become deficient during chronic stress.



DHEAS

DHEAS (dehydroepiandrosterone sulfate) is a steroid hormone made by the adrenal glands. It's often high with polycystic ovarian syndrome (PCOS) and low with HPA axis dysfunction. DHEAS naturally declines with age.



Your doctor may not be familiar with the terms “adrenal fatigue” and HPA axis dysfunction. If you mention “adrenals” to your doctor, she will test for Addison’s disease, which is a rare autoimmune disease of the adrenal glands.

Diet and Lifestyle to Regulate Your HPA Axis

Rest and joy are the best treatments for your HPA axis. In the pursuit of period health, you now have permission to take time away from your work and other duties, and instead, spend some time doing the things you love. Maybe you like sports, athletics, swimming, or dancing. Make time to do that. Or maybe your thing is to go to the art gallery or go walking with friends. Make time to do that. Or maybe you love yoga or reading novels, or

cooking. Whatever it is that you love to do, please schedule some time to do it. Put it on your calendar like you would a meeting or an appointment. It's an appointment with yourself! Within two months, you will see the results on your monthly report card.

Meditation, massage, and yoga are all helpful relaxation techniques. Please choose the style that appeals to you.

Maintaining a stable blood sugar can further improve the function of your HPA axis. The best way to do that is to eat a small portion of protein with every meal, especially breakfast. (See the Protein section below.)

Supplements and Herbal Medicines to Regulate Your HPA Axis

Magnesium is the key nutrient for calming your nervous system and regulating your HPA Axis. We'll look at magnesium later in this chapter as [The Miracle Mineral for Periods](#).

Zinc improves the health of the hippocampus ^[94], which is the part of the brain that calms the HPA axis. Please see the Zinc section later in this chapter.

B vitamins reduce perceived stress and improve anxiety ^[95].

How it works: B vitamins are required for the synthesis of calming neurotransmitters like GABA and serotonin.

What else you need to know: For general stress and HPA axis dysfunction, please choose a quality *activated* B-complex that also contains choline. An activated B vitamin is one that is in its natural form such as folate (5-methyltetrahydrofolate) rather than synthetic folic acid. For PMS and perimenopause, you may require additional vitamin B6.

Rhodiola rosea is an herbal medicine that was traditionally used as an energy and fertility tonic in Iceland, Norway, Sweden, and Russia.

How it works: It calms your HPA axis by sheltering your brain from cortisol and excitatory neurotransmitters ^[96]. In one Swedish placebo-controlled study ^[97], participants given *Rhodiola* had measurably lower cortisol levels and scored better on scales of burn-out and cognitive function. It also relieves symptoms of depression ^[98].

What else you need to know: I recommend 150-300 mg per day of a standardized preparation with 2 percent of the active constituent rosavin.

You can take *Rhodiola* as part of a combination formula with other *adaptogen* herbs like Siberian ginseng and ashwagandha. For best results, take an adaptogen formula twice daily for at least three months. *Rhodiola* is endangered in some parts of the world, so please choose a product that's been sustainably sourced.



adaptogen

In herbal medicine, an adaptogen is a plant extract which helps the body adapt to stress. The term is not recognized by the scientific community.

Sleep

Sleep is another priority strategy for period health. Getting seven or eight hours of quality sleep each night will do more for you than almost any supplement or herb we discuss in this book.

Why is sleep so important for hormones? For one thing, it stabilizes your HPA axis and cortisol. It also improves your insulin sensitivity and regulates the release of luteinizing hormone (LH), estrogen, and progesterone.



Sleep is more important than exercise. Hopefully, you have time in your day for both. If you have to choose between sleep and exercise, choose sleep!

Aim for at least seven hours each and every night. If you have trouble sleeping, then please take a minute to consider the underlying reason.

Possible causes of insomnia:

- Chronic stress
- HPA axis dysfunction and elevated cortisol
- Low blood sugar
- Lack of evening *wind-down* time

- Too much caffeine
- Magnesium deficiency
- Thyroid disease
- Perimenopause
- Grief
- Anxiety
- Depression
- Evening exposure to blue light (screens)

Blue light is the glare from your TV or phone, and it's bad for sleep because it interferes with the sleep hormone melatonin. A simple solution is to dim your phone and use one of the tools to reduce blue such as the computer plugin *f.lux* or the phone application *Twilight*.



melatonin

Melatonin is a hormone made by the pineal gland at the top of your brain.

Supplements and Herbal Medicines to Aid Sleep

Magnesium is the best supplement for promoting healthy sleep. Please see the Magnesium section later in this chapter.

Melatonin can be taken as a supplement. A melatonin supplement works particularly well when insomnia is due to aging, depression, or jet lag.

How it works: It promotes sleep.

What else you need to know: I recommend 0.5 to 3 mg at bedtime. It is non-addictive, so safe for long-term use. One precaution: Melatonin reduces estrogen and can interfere with fertility. That said, if you have polycystic ovarian syndrome (PCOS), it can promote ovulation and *improve* fertility (see Chapter 7).

Ziziphus spinosa is an herbal medicine from Traditional Chinese Medicine.

How it works: It's a non-addictive sedative [\[99\]](#).

What else you need to know: It's typically combined with magnolia (*Magnolia officinalis*) for a stronger effect [\[100\]](#). *Ziziphus* is suitable for everyone but is particularly helpful for perimenopause because it can relieve palpitations and night sweats. Dose as directed.

Other effective herbal medicines for sleep include *Kava*, valerian, magnolia, passionflower, and hops.

Exercise

Regular exercise is highly beneficial for period health.

How exercise improves period health:

- Modulates your stress response and reduces cortisol.
- Improves your sensitivity to insulin so can prevent or treat period problems like polycystic ovarian syndrome (PCOS).
- Improves circulation to your pelvic organs, strengthens your pelvic floor muscles, and aligns your uterus inside your pelvis.
- Reduces chronic inflammation [\[101\]](#).

What type of exercise should you do? Bottom line: Choose the type you enjoy. That will make it much easier to commit to exercise on an ongoing basis. For example, you may enjoy team sports. Or you may prefer swimming, dancing, walking, or yoga. Any and all of those activities are beneficial for period health.

Special Topic: Is Too Much Exercise Bad for Periods?

There's an old idea that too much exercise can stop periods. It's because some athletes develop what used to be called "female athlete triad" which is amenorrhea in combination with an eating disorder and decreased bone mineral density. The updated term is *Relative Energy Deficiency in Sport* (RED-S) which is defined as "energy deficiency relative to the balance between dietary energy intake and energy

expenditure required for health and activities of daily living, growth and sporting activities” [102].

In other words, the problem is not exercise *per se*, but rather not consuming enough energy (food) to sustain that level of activity. As we’ll see in Chapter 7, the solution is to *eat more*.

Cool Inflammation

Chronic Inflammation

Now we come to an important topic in period health: Chronic inflammation.

Chronic inflammation is a major factor in *all* types of period problems. Does that surprise you? When you think of inflammation, you probably think of the pain and redness that occur in isolated parts of the body like joints or skin. It makes sense that inflammation causes certain types of period problems, such as period pain.

But chronic inflammation is about more than just pain and redness. Much, much more. Chronic inflammation is about *whole-body communication*.

The different parts of your body need to talk to one another. They need to communicate, and your hormones are a big part of that communication. For example, your pituitary gland talks to your ovaries with your hormone FSH. In turn, your ovaries talk to *all of the rest of your body* with your hormones estradiol and progesterone.



There are estradiol and progesterone receptors in *all* of your body’s tissues including breasts, uterus, brain—but also bones, muscles, liver, and intestine. Even your gut bacteria respond to hormones.

Your hormones are important messengers for your period health, but they are not the only messengers. You have other chemical messengers made by

your immune system. They have names like *TNF-alpha*, *IL-6*, and *IL-8*. You don't need to learn all the names of your immune system's chemical messengers. We'll leave that to the biochemists. From now on, we will simply refer to them as *inflammatory cytokines*.



cytokines

Pro-inflammatory cytokines are chemical messengers that your body uses to fight infection. They are part of your body's inflammatory response.

The primary job of inflammatory cytokines is to protect you against infections and cancer. That's a good thing.

Unfortunately, inflammatory cytokines also insert themselves into the conversation between your hormones and your hormone-sensitive tissues. Their contribution to the conversation is mostly obstructive. For example, inflammatory cytokines slow the response of your ovarian follicles to FSH. They impede ovulation and impair progesterone production. Inflammatory cytokines also block the receptors for your beneficial hormones, progesterone and thyroid hormone, and *hyperstimulate* your receptors for estrogen.

All things considered, inflammatory cytokines are a profound hindrance to period health.

How do you reduce inflammatory cytokines? You avoid as much as possible anything that over-activates your immune system. You avoid sources of inflammation.

Sources of inflammation:

- Smoking
- Stress
- Lack of exercise
- Environmental toxins
- Inflammatory foods
- Unhealthy gut microbiome

Smoking is the most inflammatory thing you can do because cigarette smoke contains cadmium and pesticides and other hormone-damaging, immune-activating toxins. If you are a smoker, your first step is to quit.

Another source of inflammation is environmental toxins such as plastics, pesticides, and mercury. Toxins can be tough to avoid entirely, so don't worry too much. I have provided some tips in the [Environmental Toxins](#) section in Chapter 11.

Anti-Inflammatory Diet

Certain foods stimulate your immune system to make inflammatory cytokines. That means your diet can be inflammatory. That also means your diet can be *anti-inflammatory*, which is exciting. Change your diet, and you can dramatically reduce inflammation.

How do you get started? Which foods are inflammatory? I have grouped the top five inflammatory foods into three categories:

1. Metabolic Disruptors: Sugar and Alcohol
2. Digestive and Immune Disruptors: Wheat and Dairy Products
3. Processed Vegetable Oils

Sugar, alcohol, wheat, dairy and vegetable oil. Those are the top five inflammatory foods. Let's now look at each food in detail, and let's be sensible about it.

The following recommendations are guidelines, not hard and fast rules, so don't get too worried. A few of you may require strict avoidance if you have a severe sensitivity. But many of you can probably tolerate a small amount of inflammatory food. A lucky few of you can eat wheat and dairy with no problem.

Also, remember that these are only five foods. That leaves you with a lot of other delicious foods to enjoy. I provide some menu suggestions at the end of the chapter.

Metabolic Inflammation: Sugar and Alcohol

Inflammatory food #1: Sugar

Sugar causes inflammation in a couple of different ways. First, it causes tissue damage. Sugar gloms onto your cells like little bits of chewing gum, and your immune system does not like that. It perceives this kind of “sugar-damage” as an attack and makes inflammatory cytokines to defend against it.

The second way that sugar causes inflammation is that it causes *insulin resistance*.



insulin

Insulin is a hormone made by your pancreas. It stimulates your liver and muscles to take up sugar from your blood and convert it to energy.

What is insulin resistance?

Under normal conditions, your hormone insulin rises briefly after eating. It stimulates your liver and muscle cells to take up food energy from your blood and convert it to energy. That causes your blood sugar to fall, and then your insulin to fall. When you are *insulin sensitive*, both your sugar and insulin are low on a fasting blood test.

When you are *insulin resistant*, your blood sugar may be normal, but your insulin is high. Why? Because your pancreas has to make more and more insulin to try to get its message through. Too much insulin generates inflammation and causes weight gain. It can also lead to diabetes and cardiovascular disease. Finally, too much insulin can impair ovulation and stimulate your ovaries to make testosterone, which is why insulin resistance is a major driver of polycystic ovarian syndrome or PCOS (Chapter 7).



insulin resistance

Insulin resistance is a condition of high insulin, in which the cells of the liver and muscles fail to respond properly to insulin. It is the precursor to Type 2 diabetes.



If you have Type 2 diabetes, you have insulin resistance.

You can easily diagnose insulin resistance with a blood test. Please refer to Chapter 7 for testing and treatment.

How sugar causes insulin resistance

Sugar, or more specifically, *fructose* impairs insulin sensitivity more profoundly than any other food [\[103\]](#). Adding fructose-sweetened drinks to the diet can induce insulin resistance in just eight weeks [\[104\]](#). Fructose is also a potent appetite-enhancer [\[105\]](#), which is why sugar can make you feel hungry all the time.

But wait. Isn't fructose in fruit? How could fruit be unhealthy? Yes, there's fructose in fruit, but it's a small amount. A small amount of fructose does *not* cause inflammation or insulin resistance but instead *improves* insulin sensitivity and health. A small amount of fructose is less than 25 grams per day, which is about what you'd get from three servings of whole fruit.

In contrast, a large amount of fructose is what you get from the Standard American Diet or Western Pattern Diet. If you eat a "normal" diet, you're eating at least 100 grams of *added* fructose per day, and probably more. You're getting it from all the sweet things like soft drinks, candy, chocolate bars, desserts, sweetened yogurts, and breakfast cereals. Some of those foods contain high fructose corn syrup, which is 55 percent fructose and 45 percent glucose. Many of them contain table sugar or sucrose which is not that different at 50 percent fructose and 50 percent glucose.

You may also be getting a lot of fructose from "natural sugars" such as honey, agave syrup, date balls, and fruit juice. ***Natural sugars are still sugar.*** Dates, for example, are among the most sugary foods you can eat, and a single 16-ounce glass of orange juice contains 45 grams of fructose.



The impact of fructose on your health depends on the *amount* you consume. The small amount in whole fresh fruit is fine. The large amount in fruit juice and dried fruit can cause or worsen insulin resistance.

Need a quick way to know if a food item has too much sugar? Ask yourself: “Does it taste really sweet?” If it does—if it is essentially *dessert*—then it has too much sugar.

So how much sugar should you eat? Put it this way: *Not* the 100 grams of added sugar of the Standard American Diet.

Instead, you can most certainly have the 25 grams that occur naturally in a whole food diet. That’s true regardless of your health. Beyond that, it depends.

If you have normal insulin sensitivity, you might be able to get away with the 25 grams of *added* sugar recommended by the World Health Organization.

If you have insulin resistance or insulin-resistant PCOS, you’d do better to avoid all added sugar.

I understand that quitting sugar is not easy, especially if you’re addicted. For a full discussion and treatment ideas, please see the [Quitting Sugar](#) section in Chapter 7.

Aren’t rice and potatoes just as bad as sugar?

Sugar is a carb, so what about other carbs such as rice and potatoes? Aren’t they just as bad? In a word: No. Most starches contain mostly glucose and very little fructose. And starch does not impair insulin sensitivity as profoundly as does fructose.

Glucose and starch do *increase* insulin, so they could cause insulin resistance if you were to eat lots and lots of starch and nothing else. Hopefully, that’s not what you’re doing. Hopefully, you’re eating a moderate amount of starch together with other foods such as meat and vegetables (protein, fat, and fiber) which slow the entry of glucose into your body and thereby curb your insulin response.



Adding vinegar to a meal is an easy way to slow the entry of glucose into the body [\[106\]](#).

Suffice it to say: Sugar is inflammatory and causes insulin resistance. In moderation, starch does not. According to researcher Richard Johnson from the University of Florida:

“Starch-based foods don’t cause weight gain like sugar-based foods and don’t cause the metabolic syndrome like sugar-based foods. Potatoes, pasta, and rice may be relatively safe compared to table sugar. A fructose index may be a better way to assess the risk of carbohydrates related to obesity.” [\[107\]](#)

Professor Richard Johnson

Inflammatory food #2: Alcohol

For a long time, we thought a small amount of alcohol might be good for health. That wishful thinking seems to have come to an end as we discover that even a few drinks per week can have a negative effect on health over time [\[108\]](#).

Why is alcohol inflammatory?

For one thing, it’s often mixed with sugary beverages such as pop, tonic water, or fruit juice. If that’s what you’re doing, then you’re getting a double whammy of inflammatory food #1 (sugar) *plus* inflammatory food #2 (alcohol).



If you want to enjoy the occasional alcoholic beverage, then at least choose a non-sugary kind such as dry wine or beer.

Secondly, long-term consumption of alcohol shrinks the brain including the hippocampus, which is the part of the brain that regulates the HPA axis or stress response system. The result can be a dysregulation of your stress response or HPA axis [\[109\]](#).

There’s more. Alcohol causes insulin resistance [\[110\]](#), damages gut bacteria [\[111\]](#), prevents nutrient absorption, impairs detoxification, and depletes an important anti-inflammatory molecule called glutathione.

Glutathione

Glutathione is a powerful antioxidant and immune-regulator. Every cell in your body makes glutathione, and every cell needs it. Its primary job is to quench free radicals and eliminate toxins, but it also *reduces inflammatory cytokines*. One of the best ways to support glutathione is to cut back on

alcohol or avoid it altogether. We'll consider other ways to support glutathione in the final [Advanced Troubleshooting](#) chapter.



Alcohol impairs the healthy clearance of estrogen, which is why drinkers have more estrogen and a greater risk of breast cancer [\[112\]](#).

What's the verdict on alcohol? You can enjoy the occasional wine or beer, but, as a woman, please do not exceed four or five standard drinks per week. And please do not exceed two drinks in one sitting.



standard drink

In the US, a standard drink contains 0.6 ounces (18 mL) of alcohol which equates to a 12 ounce (350 mL) glass of beer or a 5 ounce (150 mL) glass of wine.

Digestion and Immune Inflammation: Food Sensitivities

Sugar and alcohol are inflammatory because of their effect on insulin and glutathione. Food sensitivities such as wheat and dairy are different. They're inflammatory because of their effect on digestion and the immune system.

To better understand this, you must first understand that your immune system and digestion are *not separate things*. They are, in a sense, one continuous entity. Eighty percent of your immune system is clustered around your digestion, where it's in constant communication with your gut and gut bacteria. A "food sensitivity" or a "food intolerance" occurs when a food upsets your gut bacteria or inflames your gut lining—thereby causing your immune system to make inflammatory cytokines.

A food intolerance is *any adverse reaction to a food*. It is a broader and more complex reaction than a food allergy.



food sensitivity

Food sensitivity is a broad category of adverse reactions to food. It is often a delayed reaction that involves inflammatory cytokines. Food sensitivity is different from a true food allergy.



food allergy

Food allergy is an immediate reaction to food. It is mediated by a part of the immune system called IgE antibodies and causes symptoms such as hives or swollen airways.

Common symptoms of food sensitivity include things like headaches, joint pain, digestive bloating, and food cravings. Of course, many of those symptoms can be attributed to other causes which is why “food sensitivity” is a controversial topic.

Did you notice that *food cravings* are a symptom of food sensitivity? Very often, the craving is for the food that causes the sensitivity (wheat or dairy), but it can also express itself as a craving for *sugar* (inflammatory food #1).

Intestinal Permeability

You are more at risk for food sensitivity if you have a digestive condition called *intestinal permeability*, which means your intestinal wall is “leaky” and permits food proteins to enter your body. The result of that “leakiness” is chronic inflammation ^[113]. For more information, please see the [Intestinal Permeability](#) section in Chapter 11.

Which Foods Cause Food Sensitivity?

Any food can potentially trigger a food sensitivity reaction, but the most common reactive foods are wheat and dairy products. Based on clinical signs (which I’ll explain below), wheat and dairy are the inflammatory foods that I most commonly ask my patients to avoid. Eighty percent of the

time that gets a result within three months. If not, then I consider other common food sensitivities such as eggs, chocolate, fish, nuts, and high histamine foods (see below).



Removing an inflammatory food from your diet can do far more for you than any supplement.

Inflammatory food #3: Wheat

You've probably heard conflicting opinions about wheat and gluten, with some people claiming that gluten is the root of all evil, and others saying it's just fine. There's a reason for the controversy: Wheat affects some people more than others. It all depends on your genetic susceptibility, and also on the state of your gut microbiome and whether you have intestinal permeability or not.

For a lucky few of you, wheat is not inflammatory and not a problem for period health. For a great number of you, however, wheat *is* a problem. Consider [Meagan's story](#) (Chapter 1) who had irregular periods because of wheat. Wheat is also a contributing cause for [premenstrual migraines](#) (Chapter 8) and endometriosis (Chapter 9).

Based on my experience with thousands of patients, I can say this: *When* wheat is a problem, it is a big, *big* problem. I predict that wheat is a major issue for at least one in ten of you. That's why I've listed it as the third most inflammatory food. Wheat is a minor issue for six in ten of you. For the rest of you, wheat is probably not an issue.



What is the problem with wheat?

Wheat allergy

You could have a true IgE-mediated allergy to wheat, which can be picked up by an immunologist on a standard allergy “scratch test.” Symptoms of wheat allergy come on quickly within minutes or hours and can progress to anaphylaxis.

Gluten and celiac disease

You could be reacting to gluten which is an inflammatory protein in wheat and other grains. If your reaction to gluten is severe enough, you will test positive for celiac disease on a blood test. For the test to be accurate, you have to consume gluten for a few weeks. That’s why it’s important to rule out celiac disease *before* you eliminate gluten.



There is gluten in wheat, spelt, rye, barley, and possibly oats.
There is **no** gluten in rice, corn, millet, quinoa, or potatoes.

Celiac disease is becoming more common but it still only affects about one in a hundred people. Unfortunately, many of you who test for negative for celiac disease may still have a significant problem with gluten. You have something called *non-celiac gluten sensitivity* or NCGS.

Non-celiac gluten sensitivity (NCGS)

For a long time, doctors and researchers did not acknowledge the existence of non-celiac gluten sensitivity, but that’s all changed now. Most experts now recognize that it exists and that it’s an inflammatory condition which can manifest with digestive and *non-digestive* symptoms [\[114\]](#) [\[115\]](#) [\[116\]](#). In other words, you can have a serious problem with gluten but have *no* digestive symptoms. One study found that people with non-celiac gluten sensitivity experience depression when they eat wheat [\[117\]](#).

Symptoms of non-celiac gluten sensitivity (NCGS)

- Depression
- Inability to gain weight
- Inability to lose weight
- Irritable bowel syndrome (IBS)
- Mouth ulcers
- Headaches

- Migraine
- Brain fog
- Joint and muscle pain
- Leg or arm numbness
- Eczema
- Psoriasis
- Autoimmune disease



Symptoms of non-celiac gluten sensitivity can occur days or even weeks after gluten exposure.

Researchers are scrambling to understand gluten sensitivity and to come up with a way to diagnose it. In the meantime, the best way to assess yourself is to try avoiding wheat for *at least* eight weeks and see how you feel. You need to wait eight weeks because that's how long it takes for the inflammatory reaction to subside.

FODMAPs

For some of you, the problem may not be gluten at all, but rather another component of wheat called fructan or fructooligosaccharide. Fructooligosaccharide is one of the several carbohydrates that together are called “FODMAPs.”

The term FODMAP is an acronym invented by researchers at Monash University in Australia. The term derives from Fermentable, Oligo-, Di-, Mono-saccharides, And Polyols, which are types of carbohydrate.



FODMAPs

FODMAPs (Fermentable, Oligo-, Di-, Mono-saccharides, And Polyols) are short-chain carbohydrates that are poorly absorbed in the small intestine.

FODMAPs occur in wheat, legumes, fruit, and some vegetables. If you cannot absorb them properly, they ferment in your small intestine and cause inflammation. The main symptom of a FODMAP problem is digestive

bloating and symptoms of irritable bowel syndrome. That is more likely to happen if you have a digestive problem called small intestinal bacterial overgrowth or SIBO. For more information about SIBO and FODMAPs, please see the [Digestive Health](#) section in Chapter 11.



small intestinal bacterial overgrowth (SIBO)

Small intestinal bacterial overgrowth (SIBO) is the overgrowth of normal gut bacteria in your small intestine.



Spelt is a cousin of wheat and is a popular wheat substitute. Spelt does contain gluten but it does not contain FODMAPs, so it is easier to digest than wheat.

Inflammatory food #4: Dairy products

Second only to wheat, dairy is the next most common food sensitivity.

The problem with dairy is not the fat or the lactose—although some people do have difficulty digesting lactose. The problem with dairy is a protein called A1 casein (also called casomorphin or BCM7). For some of you, A1 casein is inflammatory because—like gluten—it stimulates your immune system to generate inflammatory cytokines [\[118\]](#) [\[119\]](#). A1 casein also reduces your production of the natural anti-inflammatory molecule glutathione [\[120\]](#).

Fortunately, A1 casein does not generate inflammation in everyone. If you have no signs of casein sensitivity, then you probably do not have the digestive enzyme that converts A1 casein into its inflammatory metabolite (BCM-7). You can, therefore, have normal cow's dairy.

Signs of casein sensitivity

Did you suffer recurrent tonsillitis or ear infections when you were a kid? To me, that is a clear sign of a casein sensitivity. It was a sign that casein was disrupting your immune function back then. You probably outgrew those childhood symptoms, but the immune disruption did not go away.

Now, it is manifesting as adult symptoms such as hay fever, sinus infections, chest infections, eczema, and asthma.

I would argue that other adult symptoms of casein sensitivity include acne, period pain, PMS, heavy periods, and *histamine intolerance*.



histamine intolerance

Histamine intolerance is the condition of having too much histamine. It can cause or worsen headaches, anxiety, insomnia, brain fog, hives, nasal congestion, as well as cause or worsen period symptoms such as acne, PMS, and period pain.

Histamine intolerance

What is histamine? You best know it as the part of the immune system that causes allergies and swelling. But histamine has lots of other jobs. It regulates stomach acid, stimulates the brain, and plays a key role in ovulation and female reproduction [\[121\]](#). It also boosts libido [\[122\]](#), which is why histamine increases libido and antihistamines decrease it.

Your body *makes* histamine; food sensitivities like dairy *stimulate* histamine, and many foods like fermented foods *contain* histamine. When you're healthy, your body should be able to clear all that histamine with an enzyme called diamine oxidase (DAO). If there's too much histamine coming in, or not enough going out (or both), you will develop symptoms of *histamine intolerance*.

Histamine intolerance is more common in women, and is often worse at ovulation and just before the period. Why? Because that's when estrogen is high compared to progesterone, and *estrogen increases histamine*. It does so by stimulating your immune system to make more histamine [\[123\]](#) and down-regulating the DAO enzyme that breaks down histamine [\[124\]](#). At the same time, histamine stimulates the ovaries to make more estrogen [\[125\]](#). The result is a vicious cycle of ***estrogen*** → ***histamine*** → ***estrogen*** → ***histamine***.

You may find that taking steps to lower histamine can relieve PMS, period pain, and heavy periods. That usually means avoiding cow's dairy and high histamine foods such as red wine, and by taking vitamin B6 which

upregulates the enzyme that breaks down histamine [\[126\]](#). We'll talk more about treatment in the [Histamine Intolerance section](#) in Chapter 8.

And just a warning: Histamine intolerance is not yet a recognized medical diagnosis, so your doctor may not want to hear about it.

For an example of just how dramatically dairy can affect periods, consider my patient Nina.



Nina: Dramatic improvement by avoiding dairy

Nina was not well. She came to me for bad premenstrual anxiety, but there were lots of other things going on. For example, she had hay fever, itchy ears, and recurrent headaches. She suffered constipation, fluid retention, and bad sugar cravings. She also found it hard to lose weight.

All of her blood tests were normal.

Me: “Did you suffer recurring tonsillitis or ear infections when you were a kid?”

Nina: “Yes, I had tubes in my ears.” She meant the small tubes that are inserted in kids’ ears to prevent the accumulation of fluid in the middle ear.

Me: “I need you to stop having all normal dairy products for a few months. That includes cheese, yogurt, milk, and ice cream. You can have butter and goat cheese”.

Nina: “But I love those foods!”

Me: “Yes, I know.” (It’s common to crave a food sensitivity, especially dairy.)

“But you are going to be amazed at how different you feel. Please try it.”

I also prescribed magnesium and vitamin B6 for her PMS, and I then did not hear from Nina for four months.

When she came back, she was ecstatic.

“Almost from the first day I stopped having dairy, I felt better,” she said.

“The fluid retention went away and I literally *deflated*.”

She went on to tell me that her digestion had improved immensely and she no longer needed her hay fever medication. She had no headaches, and she had lost 10 kilograms.

“How about the premenstrual irritability?” I asked.

“Nonexistent.”

Nina did not require any more appointments with me.

Nina had a fairly severe dairy sensitivity, which I estimate to affect about one in twenty patients. This kind of sensitivity is different from a true milk allergy, and there's no way to test for it.

Even if you don't have a severe sensitivity like Nina's, you could have a milder version of a sensitivity to A1 casein or cow's dairy—which could be affecting your periods.

My clinical observation is that **stopping normal cow's dairy** is one of the best front-line treatments for many period problems including PMS, acne, endometriosis, and heavy periods.

Dairy substitutes

If you have a problem with dairy, you can change to non-dairy alternatives such as rice milk, coconut milk, and almond milk. You could even occasionally have a small amount of soy milk as long as you don't have a thyroid problem—see the [Soy](#) section below. Or you can have dairy products made with Jersey, goat, or sheep's milk.

Goat, sheep, and Jersey dairy products are okay

A1 casein is found only in the milk from Holstein cows (the predominant dairy herds in the USA, Canada, Australia, and the UK). There is little to no A1 casein in the milk of goats, sheep, or Jersey cows—so they are not inflammatory. Also, there is little casein in cream, butter, or ricotta (because it's a whey cheese).



Whey is the other protein in dairy products, and there is no evidence that it is inflammatory. Unless you have a whey allergy (which is rare), you can safely consume whey protein.

What about calcium?

You can obtain all the calcium you need from Jersey, goat, or sheep dairy products. Other good sources of calcium include almonds and leafy greens. A recent Harvard study concluded that humans have *no nutritional requirement for animal milk* [\[127\]](#).

Butter

Butter contains little casein, so it's not inflammatory like other dairy products. And butter provides beneficial nutrients such as vitamin A, vitamin D, vitamin E, iodine, and selenium. To avoid the pesticides and antibiotics that accumulate in dairy fat, please choose organic butter.

Trans-Fat and Omega-6 Inflammation

Inflammatory food #5: Vegetable oil

Processed foods and fast-food meals are made with nasty vegetable oils such as soy, corn, canola, and cottonseed. Food manufacturers use these oils because they're cheap and because they have a long shelf life. Their long shelf life is due to the presence of something called trans-fat, which is so toxic that even microbes won't eat it.



trans-fat

Trans-fat is a type of fat created by the processing or hydrogenation of vegetable oil.

Food regulators have started to ban trans-fat, which is great, but there's another problem with vegetable oil: Omega-6 polyunsaturated fatty acids. Omega-6 oil is healthy and necessary in the small amount that you obtain from nuts, seeds, and brown rice. In large amounts, omega-6 promotes inflammatory prostaglandins. Omega-3 oil, on the other hand, promotes *anti-inflammatory* prostaglandins.

You want a ratio of omega-6 to omega-3 fatty acids that is *low*. In other words, you want *less* omega-6 and *more* omega-3. The best way to do this is to avoid vegetable oil and thereby decrease your intake of omega-6 fatty acids. For example, please choose olive oil, butter, coconut oil, or avocado in place of vegetable oils such as corn or soybean oil. At the same time, increase your intake of omega-3 fatty acids by eating seafood, organic eggs, and grass-fed meat. You can also supplement 1000 to 2000 mg daily of fish oil or krill oil.



Olive oil is healthy.

Although technically a vegetable oil, olive oil is not a source of omega-6 fatty acids. Instead, olive oil contains beneficial monounsaturated fatty acids. Please choose a quality brand as some olive oils are blended with other vegetable oils.

Special Topic: What About Coffee?

The milk and sugar in coffee are inflammatory, but coffee itself—black, organic coffee—is *not* inflammatory. In fact, the polyphenols in coffee may *reduce* inflammation [\[128\]](#), which can be good for periods. Other benefits of coffee are that it improves insulin sensitivity [\[129\]](#) and may promote healthy estrogen metabolism or detoxification in some women [\[130\]](#). Moderate coffee consumption appears to reduce the risk of breast cancer [\[131\]](#).

On the other hand, high caffeine intake has been linked to heavy periods [\[132\]](#), and caffeine is a stimulating drug. Too much coffee can cause anxiety and insomnia and worsen HPA axis dysfunction. Your tolerance depends on your genetic ability to metabolize caffeine and also whether you take the pill, which impairs caffeine metabolism [\[133\]](#).

Anti-Inflammatory Vegetables

Vegetables reduce inflammation, and they do so in several different ways. First of all, they provide important nutrients such as vitamin C, folate, and magnesium. Vegetables also feed your gut bacteria and deliver a wonderful cocktail of anti-inflammatory phytonutrients.

Phytonutrients are naturally occurring plant chemicals. They have names such as polyphenols, flavonoids, polyphenols, lutein, and resveratrol. There are thousands of phytonutrients, and we are just beginning to understand all the ways they benefit health and prevent disease. For example, we used to

think that phytonutrients were just antioxidants. We now know they talk directly to our cells and DNA. Phytonutrients modify hormonal metabolism and function. They switch *off* pro-inflammatory genes and switch *on* anti-inflammatory, anti-aging genes.



Some phytonutrients are available as supplements. Two examples discussed in this book are resveratrol and diindolylmethane (DIM).

Phytonutrients are wonderful medicine. To harness their power, please eat as many vegetables and fresh fruits as you can. Fill your fridge every week, and then your job is to eat it all.

Ways to fill your fridge with vegetables

1. Schedule a weekly trip to your local veggie market.
2. Sign up for a weekly delivery of a produce box.
3. Grow your own vegetables and herbs.

Phytoestrogens (plant estrogens)

Phytoestrogens are a special group of phytonutrients. They're called phytoestrogens because they exert a weak estrogen-like effect—but they're not estrogen. Phytoestrogens bind so weakly to estrogen receptors that they act more as *anti*-estrogens, which can be beneficial for symptoms of estrogen excess such as heavy periods.

Phytoestrogens occur in plant foods such as nuts, seeds, whole grains, and legumes. In a moderate amount, they are fine and even healthy [\[134\]](#). In a large amount, they can make periods lighter and sometimes even suppress ovulation. Please see [A short light cycle: Sam's patient story](#) in Chapter 9.

The best-known phytoestrogens are lignans from flaxseeds and isoflavones from soy.

Soy

Soy isoflavones are a strong phytoestrogen or *anti*-estrogen.

In a large amount, isoflavones can lighten or stop periods, but in a *small amount* (such as from edamame beans and tofu), the anti-estrogen effect of soy is *beneficial*. For example, it can prevent PMS, lighten periods, and reduce the risk of breast cancer [\[135\]](#).

Before menopause, phytoestrogens are *anti-estrogenic* because they block estradiol. After menopause, they're slightly *pro-estrogenic* because there's less estradiol to block. That's why isoflavones and other phytoestrogens can relieve menopausal symptoms such as hot flashes.

Too much soy inhibits an enzyme called thyroid peroxidase in your thyroid and can cause underactive thyroid [\[136\]](#). That's less likely to happen if you consume sufficient iodine.

Nourish Yourself

Good periods require good nutrition. In this section, we're going to look at all the macronutrients and micronutrients that your body needs to have a healthy menstrual cycle.



macronutrients

Macronutrients are substances that you require in relatively large amounts and must be obtained from food.



micronutrients

Micronutrients are substances that you require in small amounts and must be obtained from food.

Macronutrients for Period Health

The main macronutrients are protein, starch, and fat. You need an adequate supply of all three macronutrients each and every day.

Protein

Protein is essential for healthy periods because it provides amino acids to repair and maintain your hormones, muscles, organs, nervous system, and immune system. You need at least one gram of protein for every kilogram of ideal body weight. For example, if you are 65 kilograms (140 pounds), then you need at least 65 grams of protein per day. That equates to at least three servings of an animal protein (meat, fish, eggs, dairy) or six servings of a vegetarian protein (lentils, nuts, tofu).



Protein for breakfast is an easy way to improve insulin sensitivity, stabilize blood sugar, and calm your stress response or HPA axis.

There are a couple of things to consider if you're relying solely on vegetarian protein. First, you'll need to combine grains plus beans to obtain a complete array of essential amino acids. Next, you should consider that many vegetarian proteins contain phytoestrogens which can have an *anti-estrogen* effect.

Special Topic: Are You Vegetarian?

It's easier to be healthy if you eat animal products such as meat, eggs, fish, and goat cheese. That's because animal foods are the best source of protein, zinc, iron, choline, iodine, taurine, omega-3 fatty acids, preformed vitamin A, and vitamin K2. They're the *only* source of vitamin B12. Animal foods are also highly satiating which prevents over-eating and keeps your insulin low.

If you feel better on a vegan diet, then ask yourself: Is it actually because you're avoiding dairy? As we discussed earlier in this chapter, A1 milk can cause inflammation and histamine intolerance—both of which are a big problem for periods. I've spoken to more than one former vegan who came to realize that the problem was not meat, but dairy products.

If you prefer to be vegetarian, then please eat eggs and non-inflammatory dairy products such as goat and sheep dairy. If you prefer to be vegan, then please consider supplementing with the following: Zinc, iron, iodine, choline, taurine, vitamin B12, vitamin D, preformed vitamin A, vitamin K2, omega-3 fatty acids, and protein. When choosing a vegan protein supplement, please consider whether its phytoestrogens may be preventing you from ovulating. If so, please diversify your protein to include ones with fewer phytoestrogens, such as rice protein. (Keeping in mind that rice protein is not a complete protein.)

Starch

Complex carbohydrate or starch has many potential benefits for periods.

On the plus side, starch is a good source of energy and supports immune function. Starch also aids with the activation of thyroid hormone and calms your nervous system, which prevents excess cortisol. Finally, starch contains soluble fiber and a special kind of starch (resistant starch) which feeds your gut bacteria and promotes the healthy metabolism or detoxification of estrogen.

On the negative side, some starch is wheat, which is an inflammatory food for some of you. Also, *too much* starch can cause or worsen insulin resistance, as discussed above.

How much starch is too much starch? If you eat the Standard American Diet or Western Pattern Diet, you're eating cereal for breakfast, bread for lunch, and pasta for dinner. That adds up to more than 400 grams of carbohydrate per day, which is far too much.

Instead, please aim for about 150 to 200 grams of carbohydrate which equates to two potatoes plus a small serving of rice plus two pieces of fruit (for example). Please choose what I call "gentle carbs," which are *non-inflammatory* carbohydrate foods such as rice, oats, potato, sweet potato, gluten free pasta, and whole fruit. If you can tolerate gluten, you can also enjoy bread including sourdough spelt, rye, or even wheat.

Yes, rice is a gentle carb. Many of my patients fear and avoid rice because it's a "carb." But somehow, they think it's okay still to eat breakfast cereal, muffins, and cookies. Rice is a better choice than any of those foods.

Should you follow a low-carb diet?

You almost certainly want to avoid sugar, the worst carb. Beyond that, you may also want to reduce your intake of starch, especially if you already have insulin resistance or diabetes [\[137\]](#).



One simple way to reduce carbohydrate is to have a low-carb breakfast of eggs or meat plus vegetables.

Please take care with a low-carb diet. Yes, it might make you feel quite well *in the short term*. But that could be because you stopped eating wheat—not because you stopped eating all carbs. Or it could be because you stopped eating a difficult to digest type of carbohydrate called FODMAPs which we discussed earlier. If your problem is FODMAPS, then a better plan is to fix your digestion so you can eat FODMAPS again. We'll see how to do that in the [Digestive Health](#) in Chapter 11.

If you follow a low-carb diet in the long term, you might run into problems. A low-carb diet can increase cortisol, slow down thyroid [\[138\]](#), and cause insomnia, constipation, and hair loss. A low-carb diet can also cause you to eventually lose your period because women need carbohydrate to ovulate [\[139\]](#). Some women need quite a lot of carbohydrate to ovulate, but some need less. If you are in menopause, then you don't need to ovulate so you might do okay on a short-term low-carb diet.

Potential adverse effects of a low-carb diet:

- Anxiety
- Insomnia
- Underactive thyroid
- Hair loss
- Constipation
- Amenorrhea (lack of periods)

In general, men do better on a low-carb diet. Remember [Zarah](#) from Chapter 5? Her boyfriend Sam thrived on a low-carb diet, but she lost her period.

You don't have to eat a lot of carbohydrate. About 150 grams is usually enough, and the best time to eat it is with dinner because it will stabilize

your blood sugar and help you sleep.

Fat

Fat and cholesterol are important for period because they are the building blocks for your steroid hormones estrogen and progesterone. Certain types of fat, such as medium-chain and omega-3 fatty acids found in coconut oil and fish, have the additional beneficial effect of being anti-inflammatory.

Satiety

You need all three macronutrients—protein, starch, and fat—for satiety. In other words, you need all three to feel full and satisfied and happy in your body. Please don't underestimate the importance of this. We'll look more closely at satiety later in the chapter.

You also need all three macronutrients to convince your hypothalamus you have enough nutrition to ovulate and have a period.

Micronutrients for Period Health

Micronutrients are vitamins and trace minerals that are essential to period health. There are dozens of micronutrients. You need them all, but fortunately, you do not need to *supplement* them all. You only need to supplement those that are difficult to obtain from diet.

Let's start with the one I recommend most often: Magnesium.

Magnesium: The Miracle Mineral for Periods

I prescribe magnesium for almost every patient, and for almost every period problem. As you'll discover in the coming chapters, magnesium is my front-line treatment for polycystic ovarian syndrome (PCOS) (Chapter 7), PMS (Chapter 8), and period pain (Chapter 9). I love magnesium because it gives fast results. Most people feel better almost immediately when they supplement magnesium.

Food sources of magnesium include nuts, seeds, and leafy green vegetables. For most of you, that food supply is not enough. Why? Because you live in the modern world, and the modern world is stressful.

Stress causes your body to dump magnesium, which is unfortunate because during stress is when you most need such a wonderful, calming

mineral. It seems illogical, but your body has a plan. By actively excreting magnesium, your body revs up your nervous system, and that helps you to deal with whatever stressful situation you've gotten yourself into. In a traditional, less stressful lifestyle, this magnesium-dump would not have been a problem. You would experience one acute stress but then would have days to recoup your magnesium from leafy green vegetables.

In the modern world, you shift from one stressful situation to the next. Your body dumps magnesium again and again, and your leafy green intake can never keep up. On top of that, you are faced with environmental toxins that can also deplete magnesium.

How it works: Magnesium soothes and calms your nervous system and aids with sleep. It regulates your HPA axis and improves the function of both insulin and thyroid hormone. It's also anti-inflammatory and aids in the manufacture of steroid hormones, including progesterone. For all those reasons, magnesium is my #1 supplement for periods.

What else you need to know: You might be wondering if you can test magnesium to confirm you are deficient. The answer is no. Most of your magnesium is *inside* your cells, so cannot be detected by a serum, urine, or hair test. A test for red cell magnesium is a bit better, but truly, there is no reason to test magnesium. If you live in the modern world, you need magnesium. It's that simple, and it's easiest to just to try some and see how you feel.

Unless you have chronic kidney disease, magnesium is safe for long-term use. Some forms of magnesium (such as magnesium chloride) cause diarrhea, but gentler forms such as magnesium chelate (magnesium glycinate) are usually fine. I recommend 300 mg directly after food.



Amy: Magnesium to the rescue

Amy was suffering bad PMS.

“I’m snappy for the ten days before my period,” she told me. “And I need chocolate just to get through the afternoon.” Otherwise, her health was pretty good, which surprised me considering how busy she was. She worked ten-hour days for a busy Sydney law firm and got home late most nights—just in time to eat, sleep, and do it all over again.

“I might need the herbal medicine *Vitex*,” Amy said. “I’ve heard it’s good PMS.”

“I think you need something stronger,” I replied. “Your body is under a lot of pressure from your long work hours.”

I prescribed a tablet that contains 150 mg magnesium glycinate and 35 mg of vitamin B6 and asked her to take two per day. I also recommended a 15-minute meditation audio to do at lunchtime.

“Let’s give that one cycle,” I suggested. “And then we’ll talk about *Vitex*.”

I met with Amy after her next period, and her premenstrual irritability was already 60 percent better. She also told me that she had fewer sugar cravings within just a few days of starting the magnesium.

We continued to work on a few things. For example, Amy removed sugar and dairy from her diet. Instead of normal chocolate, she changed to dark chocolate (85 percent cocoa). She also did take *Vitex* for a few months which improved her PMS even more. Of everything Amy did, the magnesium plus vitamin B6 had the most dramatic impact on her PMS.

Amy’s story shows the power of magnesium to stabilize the HPA axis. Magnesium is particularly helpful for PMS, as we’ll see in Chapter 8.

The other micronutrients I prescribe most often are zinc, vitamin D, and iodine. Let’s have a look.

Zinc

Zinc is a *huge* player in period health. Second only to magnesium, it’s the supplement I prescribe most often. Zinc works incredibly well for polycystic ovarian syndrome (PCOS) (Chapter 7), PMS (Chapter 8), period pain (Chapter 9), and acne (Chapter 11).



Zinc deficiency is a common reason for irregular periods.

How it works: Zinc is anti-inflammatory ^[140] and regulates your HPA axis or stress response ^[141]. It also nourishes ovarian follicles to promote healthy ovulation and progesterone. Finally, it’s essential for the synthesis, transport, and action of *all* hormones including thyroid hormone, and it’s a natural androgen blocker ^[142].

What else you need to know: Animal products, particularly red meat, are the best source of zinc. If you're vegetarian, you're likely to be deficient. Also, your body can't store zinc, so you need to eat a small amount every day. Your doctor can test your zinc with a blood test called *plasma or serum zinc*. Your level should be between 14 to 19 $\mu\text{mol/L}$ (90 and 125 mcg/dL). If you're deficient, take 30 mg of zinc citrate or zinc picolinate directly after food. Do not take zinc on an empty stomach or it will cause nausea.

Vitamin D

Vitamin D is not like other vitamins. It's actually a *steroid hormone* that regulates more than 200 different genes in your body. It's essential for both healthy insulin sensitivity and ovulation, so you can see why correcting a vitamin D deficiency might be pretty important for periods.

How it works: Vitamin D helps you to absorb calcium and deposit it in your bones, but that's just the tip of the iceberg. It's also a powerful regulator of both immune and hormonal function.

What else you need to know: You normally synthesize vitamin D from a cholesterol precursor when your skin is exposed to UV light (sunshine). Several things can interfere with vitamin D synthesis, including obesity, chronic inflammation, and magnesium deficiency. Your doctor can test 25-hydroxy vitamin D, and your blood level should be between 30 and 50 ng/mL (75 and 125 nmol/L). You don't want it higher than 50 ng/mL because that can be toxic. If you're deficient, take vitamin D at a dose of 1000 IU or 2000 IU per day after food. Food sources include egg yolks and mackerel, but it's hard to get enough vitamin D from food.

Iodine

Iodine is one of the most important treatments for estrogen excess symptoms such as breast pain, ovulation pain, ovarian cysts, and PMS. You might be thinking those are indirect benefits from iodine's role in thyroid hormone, but that's not it. Iodine is essential for thyroid, yes, but iodine also has direct effects on both ovulation and estrogen.

How it works: Iodine promotes the healthy metabolism or detoxification of estrogen and also makes cells *less sensitive* to estrogen [\[143\]](#). The ovaries

need a lot of iodine [\[144\]](#) to stabilize estrogen receptors and promote a smooth and healthy progression to ovulation.

What else you need to know: There is no topic in natural medicine more controversial than the dosing of iodine.

On the one hand, conventional medicine is conservative. The RDA for iodine is 150 mcg (0.15 mg) with a tolerable upper intake of 1,100 mcg (1.1 mg). Thyroid experts say that doses greater than 500 mcg (0.5 mg) can trigger autoimmune thyroid disease and that doses greater than 225 mcg (0.25 mg) are not safe for pregnant women [\[145\]](#).

On the other hand, some natural practitioners recommend mega-doses of up to 50,000 mcg (50 mg) which is 100 times (10,000 percent) greater than what your doctor considers safe.

I agree that the RDA of 150 mcg is too low. It's enough to prevent goiter (enlarged thyroid), but it's not enough for the health of your ovaries and breasts. At the same time, I do *not* think that mega-dosing is safe. Too much iodine *can* suppress thyroid function and trigger autoimmune thyroid disease [\[146\]](#). Even the Japanese, who are the world's highest iodine consumers, do not consume more than 5280 mcg (5.2 mg) per day.

Testing for iodine

The most important test to have before taking iodine is a test for thyroid autoimmunity or “thyroid antibodies” (see Chapter 11). If you have autoimmune thyroid disease, then you need to stay at a low dose or avoid iodine altogether. There's a urine test for iodine, but it is not reliable. If your doctor does order the urine test, you can improve its accuracy by testing in the morning and by avoiding iodine-containing supplements, foods, or thyroid medication for the 24 hours before the test. There is also something called an *iodine challenge test*, but it's not safe because it involves taking a single large dose of 50,000 mcg (50 mg) of iodine.



Breast tenderness can be a sign of iodine deficiency. I find it more useful than any lab test.

When I prescribe iodine, I usually give 250 – 5000 mcg (0.25 – 5 mg) in the form of either potassium iodide (KI) or molecular iodine (I₂). Compared to iodide, molecular iodine is absorbed more *slowly* into the

thyroid and more *quickly* into breast tissue [\[147\]](#). That makes it safer for thyroid and better for breast pain. Popular products such as Lugol's solution (which I do **not** recommend) provide a combination of high-dose I2 and potassium iodide.

I always give iodine together with selenium which protects the thyroid.



Too much iodine can worsen acne.

You can also obtain iodine from food:

Food sources of iodine:

- Iodized salt (400 mcg per teaspoon)
- Seafood (10 – 190 mcg per 100 grams)
- Butter from grass-fed cows
- Plant foods such as mushrooms and leafy greens, but only if they're grown in iodine-rich soil
- Seaweed (2 – 800 mcg per 100 grams)*

*Unfortunately, seaweed may contain toxic metals and it also contains bromine, which prevents the uptake of iodine.

If in doubt, please speak to your doctor.

The Best Diet

Patients and readers always ask me: “What is the best diet?” “What *exactly* should I eat?”

The best diet is one that provides an adequate supply of macro and micro nutrients, and one that is not inflammatory for you. That is the bottom line. As long as you do those two things, you will find that you have a surprisingly large amount of wiggle room regarding exactly what you eat.

Be Satisfied

I encourage you to eat full, hearty meals—and to feel good doing it. It is only by eating full meals that you will experience satiety. Dinner is the most

important time to eat a full meal because that is when you are most hungry.

Avoid Snacking

Satiety makes you feel good, and it prevents snacking. In general, snacking is something you want to minimize. Every time you eat, you go through a little pro and con trade-off.

Pro: Food gives you the macro- and micronutrients you need. Food (especially starch) also calms your nervous system and regulates cortisol, so you feel less stressed.

Con: Food increases insulin and creates inflammation. Some foods are more inflammatory than others, but all food is a *little bit* inflammatory. For this reason, I recommend that you eat substantial amounts, but *less* frequently.

In general, I recommend three solid meals per day and no snacks. It's not a hard and fast rule. If you're stressed or have not slept well, and need to snack, then snack. As your health improves, you will naturally find it easier and easier not to snack.

8-Hour Eating Window

One way to reduce snacking is to restrict eating to an eight or ten-hour *eating window*.

The way it works is that you eat a normal dinner by 6 or 7 p.m. Be sure to eat all three macronutrients (protein, starch, and fat) with that meal or you will be too hungry to fast overnight. After dinner, you can have water, tea, or coffee—but no food—until about 9 a.m. the next morning.

An eating window is a gentle type of *intermittent fasting*, which has been shown to reduce inflammation [\[148\]](#) and *reverse insulin resistance* [\[149\]](#). It may also help to prevent the recurrence of breast cancer [\[150\]](#).

You will, of course, be hungry during your eating window, so please eat what you need in the form of full, satisfying meals. An eating window is *not* a calorie-restricted diet.

Don't Be Afraid of Hunger. Don't Be Afraid of Food

I'm disturbed by the way our popular culture portrays dieting and low appetite to be a desirable trait in women. For example, when a man has a hearty appetite, it's a sign of virility and strength. When a woman has a hearty appetite, it's a character flaw. We hear things like: "She eats like a bird," and that is supposed to be a good thing. I reject that. Hunger is normal, natural, and healthy. Hunger is how your body gets the nutrition it needs to have healthy periods. Don't fight your hunger. Instead, *honor it* by giving your body substantial, satisfying meals.

Special Topic: Do You Have an Eating Disorder?

Eating disorders such as anorexia, bulimia, and binge eating have a profound effect on period health. An eating disorder is defined as having extreme emotions, attitudes, and behavior toward body weight and food.

Eating disorders are complex conditions with a diverse set of causes including physical, emotional, and social factors. Diagnosis and treatment are beyond the scope of this book. If you think you might have an eating disorder, then please understand you're not alone. Approach it with self-love and self-forgiveness, and reach out for help. Please see the Eating Disorders section in the Resources section.

I want to say a word here about a possible pitfall inherent in diet modification for health. As soon as you remove inflammatory foods from your diet, you will come to realize how much better you feel. That's great, and you should rejoice in your results. But you do not need to view those foods as *dangerous*. Please do not fall into the trap of becoming too rigid or fearful of food. That can lead you into a downward spiral of undereating or being afraid to eat out or visit friends.



If you start to feel anxious or lose your periods, ask yourself: "Am I getting enough to eat?" For more about undereating, see the Hypothalamic Amenorrhea section in the next chapter.

I encourage you to be flexible and joyful in your eating. Your body is more resilient than you think. As long as you choose real, unprocessed foods (anti-inflammatory foods), then you can be fairly flexible in your diet. You need not fear the occasional snack or meal that does not conform to your new diet. You need not beat yourself up if you stray toward unhealthy foods every once in a while. As you regain your health, and particularly after you quit sugar, your food cravings will naturally decrease. You'll find it easier and easier to choose—and to *prefer*—healthy, anti-inflammatory foods.



If you have a serious problem with wheat then, of course, please strictly avoid it. Fortunately, more and more restaurants are offering gluten-free options.

Your Diet Doesn't Have to Have a Name

Mediterranean diet, whole foods diet, Paleo diet. What do they have in common? They're all diets with fewer inflammatory foods than the typical "Western pattern diet." In that way, they're all good places to start to guide you to your own best diet. You don't have to adhere rigidly to any one of them.

As you plan your menu, please start by reducing the foods that are inflammatory for you. Then look to foods that provide the necessary macronutrients, and that are pleasurable and satiating.

Menu Ideas

What about specific foods? What exactly should your menu look like?

It depends on what appeals to you. I invite you to honor your appetite. For example, you may enjoy a large cooked breakfast. Or perhaps you prefer something simple like sardines on toast. Your appetite will change according to your activity level, sleep, and stress. It's natural to want different foods at different times.

To inspire you, here are some menu ideas that I eat myself and recommend to patients.

Breakfast:

- Option A: Eggs and avocado and leftover potato fried in butter. Unsweetened black coffee, or coffee with coconut milk or full-fat Jersey milk.
- Option B: Gluten-free bread with sardines or soft goat cheese. Fresh fruit. Tea.
- Option C: Fresh fruit with unsweetened granola and sheep yogurt.



You need *protein* for breakfast. It can be meat, eggs, fish, cheese, nuts, or unsweetened yogurt.

Lunch:

- Option A: A large green salad with grated beet, goat cheese, and smoked salmon. Olive oil dressing. Rice crackers and goat cheese on the side. Sparkling water. Two squares of dark chocolate (85 percent cocoa).
- Option B: Rice with a can of salmon and steamed broccoli.
- Option C: Leftover dinner.

Dinner:

- Option A: Bolognese meat sauce with gluten-free pasta. Green beans and organic butter. A small glass of red wine. A mandarin orange.
- Option B: Lamb chops with boiled potatoes and a green salad. Sparkling water. Two squares of dark chocolate (85 percent cocoa). Two plums.
- Option C: Lentils and brown rice with broccoli and goat cheese. Frozen berries and coconut cream for dessert.

These are only ideas. I'm sure you can come up with many more.

My ideas are wheat-free and dairy-free options for those of you who need to avoid those inflammatory foods. If you are lucky enough to be *not* sensitive to dairy or gluten, then you can expand your menu to include many other things including cheese, bread, and pasta.

We'll explore diet changes for specific period problems throughout the book.

Chapter 7



Restoring Regular Periods

Are you missing periods? Maybe you have not had one since you stopped the birth control pill. You have arrived at the treatment section for this problem.

Why Does It Matter?

No periods? Your doctor may have advised you just to take the pill and not worry until you're ready for a baby. But let's be honest. She doesn't want to tackle the problem of restoring regular menstrual cycles and ovulation because she doesn't know a way to do it. From your doctor's perspective, it's so much easier just to prescribe the pill. That will give you fake drug-induced bleeds for now, and you can always take a fertility drug later.

You know that's not good enough. You want a real period, and you want a regular period. According to the American College of Gynecologists [\[151\]](#), a regular period is a *vital sign* of health, and according to me, it's a key indicator of your *monthly report card*.

A regular period is also a good sign that you ovulate. If you take it one step further and track your temperatures to *confirm that you ovulate*, then you know that all is well with your underlying health and metabolism.

And remember, you *want* to ovulate. It's how you make the wonderful hormones estradiol and progesterone and receive their many benefits for mood, metabolism, hair, and bone health.

"Ovulatory cycles are both an indicator and a creator of good health." [\[152\]](#)

Dr. Jerilynn Prior

Let's take a closer look.

Healthy Mood

Together, estrogen and progesterone are the perfect yin and yang for mood. Estradiol lifts you up by boosting serotonin, oxytocin, and dopamine.

Progesterone calms you down by acting like GABA in your brain.

Healthy Metabolism and Body Weight

Together, estrogen and progesterone support a healthy metabolism and body weight. Estradiol improves insulin sensitivity and so helps to prevent *insulin resistance* [\[153\]](#). Progesterone enhances the production of thyroid hormone, and so increases your metabolic rate.

Healthy Hair

Together, estrogen and progesterone are very, very good for hair.

If you have irregular periods, you won't make enough of either hormone, and that can lead to hair loss—especially if you also have the excess testosterone of polycystic ovarian syndrome (PCOS), discussed later in the chapter.

The pill's synthetic hormones are not a solution for hair loss, and, as we saw in Chapter 2, can actually *cause* hair loss. For more, please see the hair loss section in Chapter 11.

Healthy Bones

Finally, estrogen and progesterone are essential for bone health. If you've had no periods for more than one year, then you are at risk for osteoporosis. Your doctor may have raised this concern with you, and recommended the pill as “bone protection.” Unfortunately, the pill does nothing for bones [\[154\]](#). The best (really the only) solution is to re-establish regular ovulation to make your own hormones.

How Regular Do You Need to Be?

How regular is regular? You don't have to have a perfect 28-day cycle. Different women have different bodies and different cycles, and that's okay. Count your cycle from your first day of bleeding (day 1). It should range anywhere from 21 to 35 days. That is normal, and a good sign that you ovulate—which is what matters. As discussed in the [physical signs of](#)

[ovulation](#) section in Chapter 3, you can confirm ovulation by tracking your body temperatures or by a blood test for progesterone.

If your cycles are longer or shorter than 21 to 35 days, then you may not be ovulating every cycle or *any* cycle. This is the chapter for you.

Anovulatory Cycles

Remember, you can bleed without ever having ovulated, and that's called an anovulatory cycle. It's normal to have the occasional anovulatory cycle [\[155\]](#), but if you have them regularly, then you may be under stress or suffer a hormonal condition like polycystic ovarian syndrome (PCOS).

From a hormonal perspective, anovulatory cycles are almost as big a problem as no cycles at all. This is the treatment chapter for both anovulatory cycles and no cycles.

Working Toward a Diagnosis

The occasional irregular cycle is probably nothing to worry about. Temporary “menstrual disturbance” is quite common following illness, stress, or dieting. Your periods should regulate again as soon as things get back to normal.

If you are consistently missing periods (or if you have never seen a period), then your starting place is your doctor's office. To assist you with that process, I have provided a list of questions in the [How to Talk to Your Doctor](#) section in Chapter 11. Your doctor will probably order some blood tests to work through the different possibilities.

Are You Pregnant?

As we saw in the [Irregular Periods](#) section of Chapter 5, your first step is to rule out pregnancy. This possibility would be obvious if you had regular periods and now they've stopped. But you might not think about pregnancy if you have not had a period in a long time. Remember: Ovulation comes first, and then your period. If you become pregnant the first time you ovulate, then you *will not see a period*. If in doubt, do a pregnancy test.

Are You a Teenager?

If you have just started your periods, it is normal to have cycles that are 45 days or longer. They should reduce to the normal 35 days after a couple of years. If they don't, you may have a condition called polycystic ovarian syndrome discussed later in the chapter.

Are You Becoming Perimenopausal?

It's normal for your cycles to shorten and become less regular in your 40s. It happens because you have more of the hormone FSH which stimulates you to ovulate earlier than you used to. You may also have cycles when you don't ovulate at all. The change in hormones may cause you to experience the new symptoms of anxiety, insomnia, and heavy periods. For treatment ideas, please see Chapter 10.

Are You Breastfeeding?

Let's take a quick look at breastfeeding. Breastfeeding suppresses periods because it stimulates your pituitary gland to make a hormone called prolactin which prevents ovulation. Your prolactin should drop within three months after you stop breastfeeding, but it can sometimes stay high. Prolactin can also be mildly elevated from thyroid disease and stress. We will explore different reasons for elevated prolactin at the end of this chapter.



prolactin

Prolactin is a pituitary hormone that stimulates breast development and breast milk. It suppresses ovulation.

Do You Have a Medical Condition?

After ruling out pregnancy, menopause, and breastfeeding, your doctor should screen you for some of the *many* underlying medical conditions that cause irregular or absent periods. The most common period-disrupting conditions are celiac disease and thyroid disease.

Thyroid disease

Thyroid disease can cause irregular periods. That is true even if you have another diagnosis such as polycystic ovarian syndrome (PCOS) or hypothalamic amenorrhea. Why? Because hypothyroidism puts you at greater risk of those conditions. For example, hypothyroidism impairs insulin sensitivity and disrupts your stress response.



hypothyroidism

Hypothyroidism means *insufficient thyroid hormone*.

Hypothyroidism also robs your ovaries of the cellular energy they require to ovulate.

If your doctor has not yet screened you for thyroid disease, ask her to do so, and do not accept the vague statement that it's "normal." Look at your result and compare it to what I define as normal in the [Thyroid Disease](#) section of Chapter 11.

If thyroid disease or another medical condition is the cause of your irregular or absent periods, then you need treatment for *that condition*. The treatments covered in this chapter will not help you.

Is It Your Medication?

Next, ask your doctor if your prescription medication could be causing your irregular periods. Common period-disruptors include stronger psychiatric medications such as antipsychotics, anticonvulsants, and some blood pressure medications. There are others. If your medication is the cause of your irregular or absent periods, then please talk to your doctor about an alternative. The treatments in this chapter will not help you.

Do You Eat Enough?

Undereating is a common reason for lack of periods. That means undereating calories or food in general. It can also mean undereating carbohydrates. Please see the Undereating section later in this chapter.

Do You Have a Nutrient Deficiency?

As discussed in the last chapter, deficiency of either zinc or vitamin D can directly cause a lack of periods or irregular periods. Please ask your doctor for a blood test. If you're deficient, then please supplement.

Are You Vegetarian?

First of all, it is possible to be vegetarian and have healthy periods. But if you don't have periods and you don't know why then please consider whether your vegetarian diet could be a factor.

There are two ways a vegetarian diet can cause amenorrhea or irregular periods. The first is that it can cause zinc deficiency, which is easy to test and correct. The second is that it can contain too many phytoestrogens such as soy and legumes, which can suppress ovulation. The solution is to switch to *non-phytoestrogen* vegetarian proteins such as goat cheese and eggs.

Phytoestrogens can also cause light periods, which is not a bad thing. Please see [A short light cycle: Sam's patient story](#) in Chapter 9.

Next Step: Test for Hormone Imbalance

Once all those possibilities have been ruled out, you're ready to look for an imbalance in your female hormones.

You need a blood test for the following hormones: FSH, LH, prolactin, estradiol, progesterone, testosterone, sex hormone-binding globulin (SHBG), androstenedione, DHEAS, insulin, 17-OH progesterone, and anti-Müllerian hormone (AMH).



sex hormone binding globulin (SHBG)

Sex hormone binding globulin is a protein made by your liver. It binds to testosterone and estrogen.



androstenedione

Androstenedione is an androgen made by your ovaries and adrenal glands.



17-OH progesterone

17-OH progesterone is an adrenal hormone that is elevated in the androgen excess condition congenital adrenal hyperplasia.



anti-Müllerian hormone (AMH)

Anti-Müllerian hormone is made by your ovarian follicles. Too much AMH is a sign of polycystic ovarian syndrome (PCOS). Too little AMH is a sign of perimenopause.

Special note about progesterone testing

Progesterone is hard to test because you make it only during the two weeks *before* your period (your luteal phase). If your periods are not regular, it will be difficult to predict your luteal phase—if you even have a luteal phase. Simply omit progesterone from the list, or try testing it on a random day. If you get lucky, your period will come within two weeks of the test, which would make it a valid test.

Summary of blood tests to assess irregular periods

General Health:

- Thyroid including TSH, free T3, free T4, and thyroid antibodies (see [Thyroid Disease](#))
- Fasting insulin *or* 2-hour insulin glucose challenge test
- General biochemistry
- Blood count
- Celiac serology
- Plasma zinc
- Serum vitamin D

Female Hormones:

- FSH and LH (preferably on day 3 of your period, or random day)
- Estradiol

- Progesterone (preferably mid-luteal)
- Prolactin
- 17-OH progesterone
- Testosterone and SHBG
- Androstenedione
- DHEAS (dehydroepiandrosterone sulfate)
- AMH

Your doctor may also order a pelvic ultrasound.



insulin glucose challenge test

A 2-hour insulin glucose challenge test is also called *insulin assay with oral glucose tolerance test* or *glucose tolerance test with insulin*. It's similar to a glucose tolerance test, but it tests insulin as well as glucose. It involves multiple blood samples taken over a few hours following a sweet drink.

From those investigations, your doctor should be able to offer you a diagnosis. Most likely, it will be either polycystic ovarian syndrome (PCOS) or hypothalamic amenorrhea (HA).

Great, you're thinking, you've finally got a diagnosis. Unfortunately, your problems are not over. What is your treatment? Your doctor has almost nothing to offer. She will recommend the pill for either condition, which is the same thing she would have offered before your diagnosis. If you're lucky, she may offer you the diabetes drug metformin for PCOS. That's a bit better but is still not a complete solution.

If you look for natural treatments, you will find there are too many. There are hundreds of proposed natural treatments for PCOS and irregular periods. How on earth do you select the one that's right for you?

It's time to go deeper. Look beyond the label of PCOS or hypothalamic amenorrhea, and try to understand: What is driving your PCOS? Why do you not ovulate?

It's called ***deep diagnosis***, and this chapter is your guide.

Polycystic Ovarian Syndrome (PCOS)

PCOS is a common diagnosis that affects up to 10 percent of women. It's best defined as *a group of symptoms* related to anovulation (lack of ovulation) and a high level of androgens or male hormones. The main symptom of PCOS is irregular periods, specifically late periods or too many days of bleeding. Irregular periods are typical of anovulatory cycles.

Other symptoms of PCOS include facial hair (hirsutism), acne, hair loss, weight gain, and infertility.



hirsutism

Hirsutism is the excessive growth of hair on your face and body. A little hair on your upper lip is normal and is not hirsutism. True hirsutism is when you have excess hair on your chin, cheeks, belly, and around your nipples.

PCOS is essentially a problem with ovulation, which results in an overproduction of androgens (male hormones) such as testosterone or other androgens.

Special Topic: Androgens

Androgens are male hormones such as testosterone, androstenedione, and DHEAS. It's normal to have *some* androgens. You need them for mood, libido, and bone health. Too many androgens cause acne, hair loss, and hirsutism.

In addition to the troubling symptoms of irregular periods, weight gain, and facial hair, PCOS is associated with a long-term risk of diabetes and heart disease. In that sense, PCOS is much more than just a period problem. It is a whole-body hormonal condition that can last a lifetime.

Diagnosis of PCOS

If you've been given the diagnosis of PCOS, your first question should be: "How was it diagnosed?"

PCOS cannot be diagnosed by ultrasound.

Does that surprise you? Polycystic ovarian syndrome got its name from the way the ovaries look on ultrasound. Of course, you'd think that appearance is an important feature of the condition. You'd be wrong.

In part, the confusion comes from the word cyst. As we saw in Chapter 5, normal ovaries are filled with ovarian follicles, and those follicles are essentially small, normal "cysts" (although they're not usually called that). Every month, those normal cysts grow, burst, and are reabsorbed.

If you progress normally to ovulation, then your ovaries will have about six to twelve developing follicles (or more, when you're younger). Then one of those follicles will become *dominant* and larger than the others and will suppress the others for the rest of that cycle.

If you do *not* progress to ovulation (as occurs with PCOS), then you will *not* form a dominant follicle and suppress the other follicles. Instead, the other follicles will keep growing just a little bit, and you will end up with many small undeveloped follicles—now officially called "cysts." That's the finding on ultrasound. Polycystic comes from poly (meaning multiple) and cystic (meaning follicles). It means *multiple follicles*.

The problem was that you *did not ovulate*, and that led to a higher than normal number of follicles—at least for that month. There's no reason to think your ovaries will always look that way. Ovaries are dynamic, living tissue, and they *change*. Every month, your ovaries make new follicles, and then every month, your ovaries reabsorb them again. That's why *every month*, your ovaries will look different on ultrasound.



The appearance of polycystic ovaries simply means you did not ovulate *that month*. It does not explain *why* you did not ovulate, nor does it predict whether you will ovulate in the future.

Polycystic ovaries can occur with PCOS, but they're not *specific* to PCOS. Polycystic ovaries occur in other situations such as on the pill or even in normal, healthy women. For example, one study found that healthy women have polycystic ovaries about *25 percent of the time* [156].

And this is important: Polycystic ovaries *do not cause pain* like other types of large ovarian cysts (see Chapter 9). If pain is your main symptom, then there is something else going on.

Special Topic: Polycystic Ovaries Are Normal for Teenagers

As a teenager, you have more ovarian follicles than older women. In fact, you can have as many as 25 follicles on each ovary and still be *normal* [157].

Likewise, as a teenager, you have longer cycles than older women. Your cycles can be as long as 45 days for a couple of years before they shorten to the normal 35 days.

Polycystic ovaries, irregular cycles, and even insulin resistance (discussed below) are all *normal* and healthy during puberty. Those symptoms are considered abnormal only if they continue for more than the first few years of cycling.

So, if PCOS cannot be diagnosed by ultrasound, how can it be diagnosed? *Very subjectively.*

There is no definitive test for PCOS because *it's not one disease*. Instead, it's a *group of symptoms*. Those symptoms have been defined according to a couple of sets of diagnostic criteria.

Androgen Excess Society Criteria

The Androgen Excess and PCOS Society say a woman has PCOS when she meets *all three* of following criteria [158]:

1. Ovarian dysfunction and/or polycystic ovaries
2. Clinical and/or biochemical hyperandrogenism
3. Exclusion of other conditions that would cause hyperandrogenism

Put into simpler words, you must have *all three* of the following to be diagnosed with PCOS:

1. Irregular periods *or* polycystic ovaries on ultrasound
2. High androgens on a blood test *or* symptoms of high androgens such as hirsutism
3. Other reasons for high androgens have been ruled out

I like the Androgen Excess and PCOS Society criteria because it emphasizes the two main aspects of the condition: Failure to ovulate regularly and *androgen excess*.

Rotterdam Criteria

The Rotterdam Criteria is a broader and looser set of criteria that says a woman has PCOS when she meets *only two* of the following three criteria:

1. Oligo-ovulation or anovulation
2. Clinical and/or biochemical hyperandrogenism
3. Polycystic ovaries on ultrasound

Plus: The exclusion of other conditions that would cause excess androgen activity

Put into simpler words, you could be diagnosed with PCOS if you have irregular periods and androgen excess (that makes sense). Or if you have androgen excess and polycystic ovaries (okay). *Or*, you could be diagnosed with PCOS if you have only irregular periods and polycystic ovaries—but *not androgen excess*. Which makes no sense because, as we've seen, your irregular periods could be due to a lot of different reasons and the ultrasound finding of polycystic ovaries does not mean anything.

Under the Rotterdam Criteria, you could be given the diagnosis of PCOS when you do not have high androgens and so *do not have the condition*. And that could subject you to a lot of unnecessary treatment and worry which the British Medical Journal says does more harm than good [\[159\]](#).

I vastly prefer the Androgen Excess Society Criteria because it says that PCOS is *by definition*, a condition of excess androgens. And as to the ultrasound finding, the Androgen Excess Society has this to say:

“The finding of polycystic ovarian morphology in ovulatory women not showing clinical or biochemical androgen excess may be *inconsequential*.” [\[160\]](#)

Inconsequential means unimportant or insignificant, so they’re saying that the presence of polycystic ovaries may not mean anything. As a sole finding, it cannot be used to diagnose PCOS.

At the same time, the *absence* of polycystic ovaries cannot be used to *rule out* PCOS. You can have a *normal* ultrasound and still have PCOS.

In conclusion, if you were diagnosed based solely on ultrasound, there’s a real possibility you do not actually have the androgen excess condition currently known as PCOS.



PCOS may soon get a new name. A couple have been put forward including *Metabolic Reproductive Syndrome* (MRS) and *Anovulatory Androgen Excess* (AAE). I prefer the latter.

Defining androgen excess

Both the Rotterdam and Androgen Excess Criteria agree on one thing: Androgen excess can be defined as either 1) high androgens on a blood test or 2) physical signs of androgen excess.

Blood tests for androgen excess

The best blood test for androgen excess is *free testosterone*, but other tests include total testosterone, androstenedione, and DHEAS. If your doctor measures *total testosterone*, she should also measure SHBG (sex hormone binding globulin) which is a blood protein that stores testosterone and estrogen. SHBG is typically low with PCOS.

Saliva testing cannot be used to diagnose PCOS because it’s not accurate [\[161\]](#).

Physical signs of androgen excess

1. **Facial or body hair (hirsutism)** that is long and dark and occurs on your chin, cheeks, belly, and around your nipples. A bit of hair on

your upper lip is *not* hirsutism and is not a sign of androgen excess. Likewise, “peach fuzz” is not hirsutism.

2. **Acne**, especially hormonal acne on your chin can be a sign of androgen excess if you are an adult. Acne cannot be interpreted as a sign of androgen excess if you are a teen [\[162\]](#).
3. **Hair loss** and hair thinning with miniaturized hair follicles. This particular kind of hair loss is called *androgenetic alopecia*. There are types of hair loss, which we’ll discuss in the [Hair Loss](#) section in Chapter 11.



androgenetic alopecia

Androgenetic alopecia is also called androgenic alopecia or female pattern hair loss. It’s caused by androgen excess or androgen sensitivity.

Rule out other reasons for androgen excess

PCOS is the most common diagnosis of androgen excess, but it’s not the *only* diagnosis. Other diagnoses include:

- Hormonal birth control with a “high androgen index”
- Some types of psychiatric medications
- High prolactin
- Hypothyroidism
- Rare pituitary or adrenal diseases
- Congenital adrenal hyperplasia



congenital adrenal hyperplasia

Congenital adrenal hyperplasia is a common genetic disorder that causes the adrenal glands to make too many androgens.

Nonclassic congenital adrenal hyperplasia (NCAH) accounts for up to 9 percent of cases of androgen excess [\[163\]](#) and is often misdiagnosed as

PCOS. It can be diagnosed with a blood test for 17-OH progesterone.

Conventional Treatment of PCOS

Hormonal birth control

The conventional approach to PCOS is to suppress ovulation with the pill, which is a bit odd when you consider that the central issue of PCOS is a failure to ovulate. The pill also suppresses androgens, which is more helpful, but unfortunately, that works for only as long as you take the drugs. As soon as you stop them, you'll have more androgens than you had before.

The biggest downside of the pill is that it can *worsen* insulin resistance, which is one of the primary drivers of PCOS (see below).

Spironolactone

Spironolactone (Aldactone) is almost the same drug as the progestin drospirenone used in the birth control pill, Yasmin . Spironolactone suppresses androgens which can be helpful for PCOS. Dr. Jerilynn Prior recommends spironolactone to be used in combination with her *cyclic progesterone therapy* described below.

Unfortunately, spironolactone does prevent healthy ovulation and can alter the activity of the HPA (adrenal) axis.

Cyproterone acetate

Cyproterone acetate (Androcur) is another anti-androgen drug that is not often prescribed often due to side effects. It's used in some birth control pills such as Diane .

Metformin

Your doctor may have offered you a diabetes drug called metformin, which is a reasonable treatment. It's a better approach than the pill because at least it works to correct insulin resistance, which is one of the primary drivers of PCOS.

If you want to take metformin, you can combine it with the natural treatments in this chapter.

If you prefer to use only natural treatments, please know that many of them work just as well as metformin anyway.

Metformin can cause digestive problems and deplete your body of vitamin B12. If you take it, please ask your doctor to test your vitamin B12

every six months. You may need a B12 injection.

The Natural Approach to PCOS

I would love to now give you a simple list of what works for PCOS, but it's more complicated than that. To get results from natural medicine, you must first go deeper and understand the different possible drivers of PCOS.

PCOS is not one disease

Remember, PCOS is essentially a group of symptoms related to androgen excess. It's *not one disease*, but rather what is called a *heterogeneous endocrine disorder*.

A heterogeneous disorder is a group of symptoms that can result from several *distinctly different* underlying drivers.

In the case of PCOS, those drivers are insulin, inflammation, adrenal androgens, and a post-pill surge in androgens. We'll look at each of those in turn, but first, let's look at the underlying *susceptibility* to PCOS that can come from both genetics and exposure to environmental toxins.

Genetic susceptibility to PCOS

Are you born with PCOS? Well, yes and no.

You can certainly be born with genes that put you *at risk* of PCOS. For example, you can be born with genes that alter how your hypothalamus communicates with your ovaries, or genes that influence how likely you are to develop insulin resistance. You can also be born with genes that make your ovaries more likely to overproduce androgens under certain conditions.

Ultimately, your genes determine how *easily* you can ovulate and how *likely* you are to overproduce androgens. But the expression of those genes depends on your *current environment*.

For example, those genes put you at a disadvantage in your current environment of the Standard American Diet and environmental toxins, but those same genes may have given your ancestors an advantage during challenging times of stress or famine. As genes, they're not inherently bad. They're just not well adapted to our modern world.

The good thing about PCOS genes.



As a woman with PCOS, you may become more fertile as you get older [\[164\]](#).

Exposure to endocrine disrupting chemicals

Another factor that can put you *at risk* of PCOS is exposure to endocrine disrupting chemicals such as pesticides, PCBs, and the plastic chemical bisphenol A (BPA) [\[165\]](#).

Like genes, toxins put you at risk for PCOS because they alter how your hypothalamus communicates with your ovaries, or how sensitive you are to insulin.

Modifying risk and reversing PCOS

Both genes and toxins put you *at risk* of PCOS, but being at risk does not mean you will always have PCOS. You can *modify* your genetic expression and ovarian function with diet, lifestyle, and other natural treatments—and that will improve your symptoms.

Once you no longer have symptoms, you may no longer qualify for the Androgen Excess Society Criteria, and so, technically, you will no longer have PCOS. You will, however, always have a susceptibility.

Types of PCOS (Drivers of Androgen Excess)

If you have a genetic susceptibility to androgen excess, then it can be exacerbated by various *drivers*.

There are four main drivers of androgen excess or PCOS.

1. [Insulin Resistant PCOS](#)
2. [Post-Pill PCOS](#)
3. [Inflammatory PCOS](#)
4. [Adrenal PCOS](#)

Let's now look at each in turn.

First things first: Do you have the irregular periods and androgen excess that define PCOS? If not, please refer again to the Diagnosis of PCOS section above.

If you're certain you have PCOS, then let's continue.

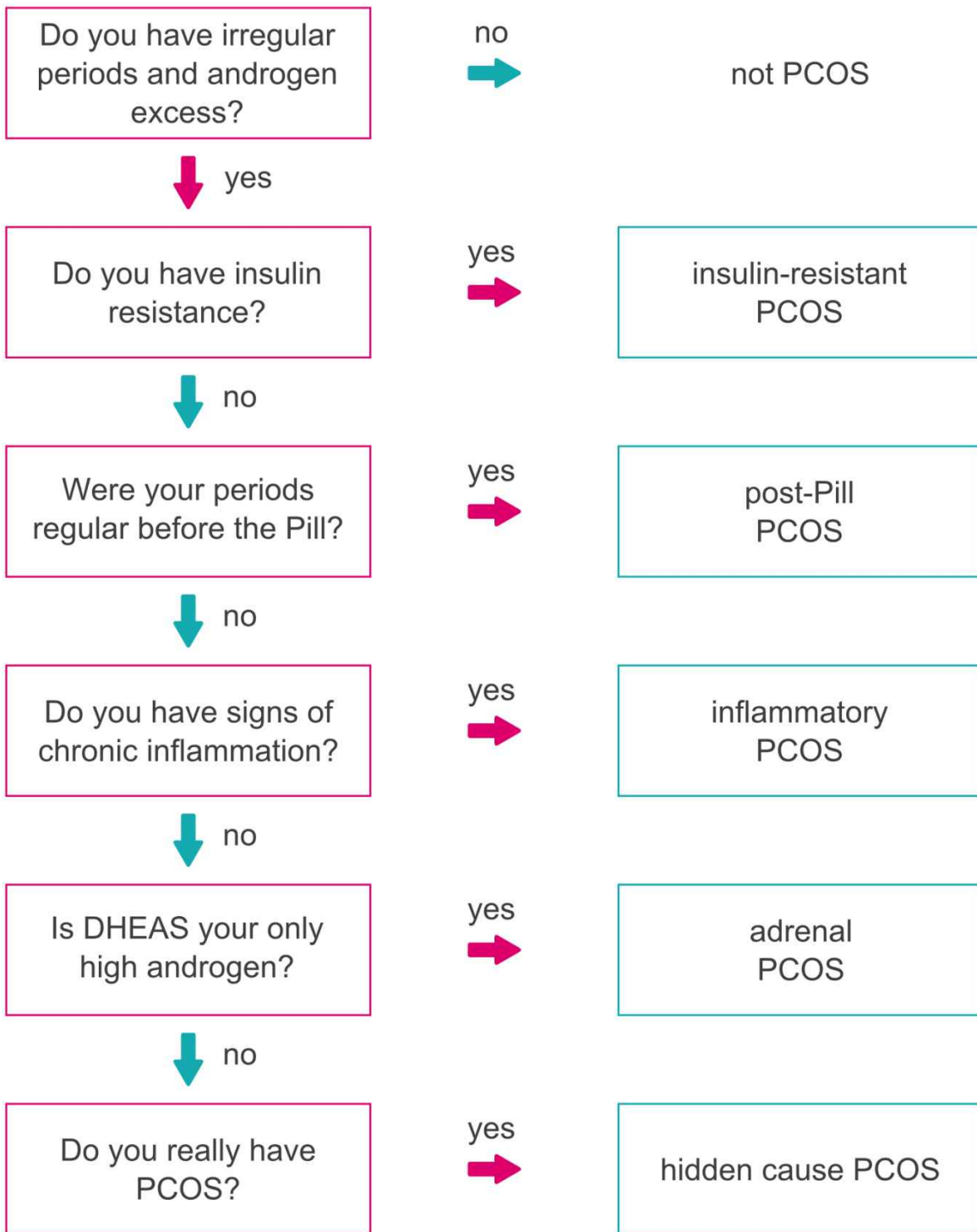


image 9 - flow chart for PCOS type

Insulin Resistant PCOS

The most common driver for PCOS is *insulin resistance*, which is the hormonal condition I described in the Sugar section in Chapter 6. When you have insulin resistance, you may have normal blood sugar, but *too much insulin*.

Too much insulin is not good for you. It can lead to weight gain, heart disease, osteoporosis, and eventually diabetes. It can also drive androgen excess if you have the genetic susceptibility to PCOS.

How insulin resistance drives PCOS

Insulin resistance is a situation of too much insulin. It directly affects ovaries by *impairing ovulation* and causing them to make testosterone instead of estradiol. Too much insulin also stimulates your pituitary to make more luteinizing hormone (LH), which stimulates even more androgens. Finally, too much insulin lowers sex hormone binding globulin (SHBG) resulting in a greater amount of *free testosterone* (unbound testosterone).



The insulin resistance of PCOS continues past menopause. If you don't treat it, you will have it your entire life.

What causes insulin resistance?

As we saw in the last chapter, sugar is the biggest cause of insulin resistance. A small amount of fructose is healthy, but a large amount of fructose causes insulin resistance more profoundly than any other food [\[166\]](#).

Other contributors to insulin resistance include smoking, stress, hormonal birth control, sleep deprivation, alcohol, trans-fat, unhealthy gut bacteria, magnesium deficiency (discussed below), and environmental toxins.

Diagnosis of Insulin Resistance

You have insulin resistant PCOS if you meet all the criteria for PCOS (irregular periods and elevated androgens) *plus* you have insulin resistance.

Diagnosis of insulin resistance

How do you know if you have insulin resistance? First, look for the physical sign of apple-shaped obesity (carrying excess weight around your waist).



Get out the tape measure.

To assess for apple-shaped obesity, take a measure at the level of your belly button. You're aiming for a normal waist measurement of about 35 inches (89 cm) or less. A more precise measure is to calculate your waist to height ratio: Your waist should be less than half your height.

Apple-shaped obesity is a common symptom of insulin resistance, so if you are overweight, then you can be fairly certain your PCOS is the insulin resistant type.

At the same time, you could be *normal weight* or even *underweight* and still have insulin resistance and the insulin resistant type of PCOS [\[167\]](#).

The only way to know if you have insulin resistance is to do a blood test.

Blood tests for insulin resistance

A test for blood sugar or blood glucose is **not** a test for insulin resistance. Instead, you need one of the following:

1. Fasting insulin
2. HOMA-IR index (insulin resistance index)
3. 2-hour insulin glucose challenge test (also called *insulin assay with oral glucose tolerance test* or *glucose tolerance test with insulin*)

Fasting insulin is a blood test for the hormone insulin. Your result should be less than 8 mIU/L (55 pmol/L). Fasting insulin can easily pick up severe insulin resistance. To detect milder insulin resistance, you'll need the more sensitive *insulin glucose challenge test*.

HOMA-IR index is a mathematical calculation using the ratio of glucose to insulin plus a constant. For healthy insulin sensitivity, your HOMA-IR index should be less than 1.5.

Insulin glucose challenge test is like a glucose tolerance test but insulin is tested in addition to glucose.



Do you have insulin resistance? Are you sure? A test for blood sugar is not a test for insulin.

Insulin resistance is the most common driver of PCOS. It's the driver for at least 7 in 10 of you. If you've been diagnosed with PCOS, chances are you **do** have insulin resistance. There is, however, a 3 in 10 chance you have a different driver which we'll discuss later in the chapter.

Diet and Lifestyle for Insulin Resistance

Quit sugar

The first thing to do is to stop having desserts and sweet drinks. I am sorry to be the bearer of bad news, but I mean stop completely. I don't mean drop back to the occasional bit of natural dessert.

If you have insulin resistance, then you are not hormonally equipped to handle any amount of dessert. Every time you eat dessert, you're pushed deeper and deeper into insulin resistance —and deeper and deeper into weight gain, acne, and hirsutism.



You can have a few pieces of whole fruit as long as you stay below the 25 grams of fructose discussed in Chapter 6.

You won't always have insulin resistance. Once your insulin is normal, you'll be able to go back to enjoying the occasional dessert. By occasional, I mean once per month.

I understand it's not easy to quit sugar because sugar is in almost everything you're used to eating including cereal, yogurt, muffins, fruit juice, smoothies, and date balls. You may need to do some serious reorganizing of your pantry and shopping list.

You may also be faced with the problem of sugar cravings and sugar addiction.

Special Topic: Are You Addicted to Sugar?

Sugar addiction is real and common. Signs include:

- You crave sugar even when you are not hungry.
- You crave sugar in response to negative emotions.
- You hide your sugar eating from your loved ones.
- You feel angry or upset at the thought of giving it up.

If you are addicted to sugar, please do not feel guilty or ashamed. Like any addiction, it can be overcome with the right support. Reach out for help.

Patients tell me that quitting sugar is as hard as quitting cigarettes. You need a plan.

Tips to help you quit sugar

- Get enough sleep because sleep reduces sugar cravings.
- Eat full, satisfying meals that include all three macronutrients: protein, starch, and fat.
- Do not restrict calories.
- Pick a start date during a low-stress time of your life.
- Go cold turkey for four weeks.
- Know that intense cravings subside after 20 minutes.
- Know that all cravings subside after two weeks.
- Supplement magnesium, because it reduces sugar cravings.
- Know that you're okay. You're not a bad person just because you crave sugar.



If you need a sweetener while you adapt to a low-sugar diet, try the natural sweeteners stevia or xylitol.

Quitting sugar is different from *going low-carb*. In fact, it's often easier to quit sugar if you allow yourself to eat potatoes and rice. Why? Because starch is highly satiating and reduces cravings.

That said, you'll probably find it *harder* to quit sugar if you eat inflammatory foods such as wheat and dairy. Why? Because those inflammatory foods can cause food cravings.



Rose: Can I really eat potatoes?

Rose knew she had insulin resistant PCOS, so she was doing her best to cut carbs. It wasn't working well. She hadn't lost any weight, and her PCOS symptoms were as bad as ever.

"I have an omelet every morning," she said. "And then salad plus meat for both lunch and dinner."

"That sounds good," I replied. "But was that enough food for lunch and dinner? Did you eat anything else yesterday?"

Rose then told me that she a skim latte with sugar in the morning and 5 or 6 date balls in the afternoon.

"Anything else?"

Rose was hungry after dinner, so she ate two bowls of Paleo ice cream made with coconut milk and agave syrup.

"I know I have bad willpower," she said guiltily. "I have to try harder."

"No, I don't think you have a problem with willpower," I said. "You were just hungry."

I asked Rose to eat three full meals per day. "Please keep going with your low-carb breakfast and lunch, but I want you to have *meat and potatoes for dinner*," I said. "Plus some vegetables, of course, and butter or olive oil. And please eat as much as you need to feel full. But then don't eat again until morning."

Rose (incredulous): "Can I really eat potatoes? That can't be right. They're bad carbs."

"Sugar is the bad carb," I said. "I need you to stop having sugar in your coffee and also stop having the date balls or any kind of dessert."

I also prescribed a powder with 300 mg magnesium to relieve the sugar cravings.

Rose was worried she would feel tired without the date balls to get her through the afternoon. But much to her surprise, she started to feel better,

and her energy improved.

When she stopped having sugar, she stopped craving sugar.

Reduce other carbs

Once you've successfully quit sugar, you can think about reducing other carbs such as bread and potatoes and rice.

A simple way to start is to have a *low-carb breakfast*. That means having eggs or meat plus non-starchy vegetables. By avoiding carbs with breakfast, you will keep your insulin low and extend the benefits of your overnight fast.

If that feels good, you could also think about a low-carb lunch.

At some point, you're going to need some starch. Why? Because starch is satisfying and calms your nervous system so you can sleep. Starch also tops up your liver's glycogen stores to keep your blood sugar stable through the night.

For all those reasons, I recommend you eat at least a small portion of rice or potato with dinner.



Don't make the mistake of reducing starch but continuing to eat sugar. In other words, please don't forgo potatoes with dinner only to binge later on a Paleo dessert.

8-hour eating window

As described in Chapter 6, you can also restrict your eating to an eight or ten-hour *eating window*. It's a gentle type of intermittent fasting which has been found to improve insulin resistance [\[168\]](#).

Exercise

Exercise re-sensitizes your muscle to insulin. For example, just twelve weeks of strength training has been found to improve insulin sensitivity by 24 percent [\[169\]](#).

Sign up for some strength training or pilates classes. Or start even smaller than that with a simple walk around the block. Climb stairs. Do some pushups.

For best results, please choose the type of exercise you enjoy.

Don't take hormonal birth control

The birth control pill causes insulin resistance [\[170\]](#), in part because it prevents the muscle gain you would normally achieve with exercise [\[171\]](#). One study found that just three months on hormonal birth control was enough to worsen insulin resistance in women with PCOS [\[172\]](#).

Special Topic: How to Prevent Uterine Cancer Without Birth Control

One of the main reasons your doctor wants you to take hormonal birth control is to reduce the risk of uterine cancer that comes with PCOS. Her reasoning is that the progestin will prevent the build-up of your uterine lining (which is true).

Fortunately, there are other, *better* ways to prevent the build-up of your uterine lining.

1. Reduce insulin to prevent insulin's stimulating effect on your uterine lining. Reducing insulin can also help you to ovulate.
2. Find a way to ovulate so you can make progesterone which will naturally protect your uterine lining (that's one of its main jobs).
3. Take micronized or natural progesterone which works as well as any synthetic progestin to thin the uterine lining.



Every natural treatment discussed in this chapter can help you to ovulate.

Supplements and Herbal Medicines for Insulin Resistance and Insulin Resistant PCOS

Before we get to the supplements, please know that *diet is more important than any supplement*. That is true for almost every condition in this book, but it's *definitely* true for insulin resistant PCOS. You must quit sugar. You can then choose one or two of the following supplements. You don't need them all.

Magnesium is the wonderful [Miracle Mineral for Periods](#) we met in the last chapter, and it's my front-line treatment for insulin resistant PCOS. A high-magnesium diet has been found to improve insulin sensitivity and reduce the risk of diabetes [\[173\]](#). In contrast, a low-magnesium diet is so strongly correlated with insulin resistance that some researchers think magnesium deficiency is one of the *causes* of insulin resistance [\[174\]](#).

I prescribe magnesium to every PCOS patient. I call it "natural metformin."

How it works: It improves insulin sensitivity [\[175\]](#).

What else you need to know: I recommend 300 mg magnesium per day taken directly after food. With my own patients, I usually chose a formula that also contains the amino acid taurine, because taurine enhances insulin sensitivity. See Chapter 10 for more information about taurine.

Alpha-lipoic acid is a fatty acid involved in energy production. It's made by the body and can also be obtained from foods such as liver, spinach, and broccoli. As a supplement, alpha-lipoic acid can improve PCOS [\[176\]](#) [\[177\]](#).

How it works: It improves insulin and promotes the healthy development of the ovarian follicle. It also boosts glutathione.

What else you need to know: Alpha-lipoic acid is generally safe, but more than 1000 mg per day may decrease thyroid hormone. I recommend 200 to 600 mg per day with food. It combines well with myo-inositol [\[178\]](#).

Myo-inositol is the messenger for insulin inside cells. Taking it as a supplement can dramatically improve PCOS [\[179\]](#).

How it works: It improves insulin sensitivity, reduces androgens, and restores regular ovulation [\[180\]](#).

What else you need to know: The two types of supplementary inositol have different effects. D-chiro-inositol improves insulin sensitivity throughout the body. Myo-inositol improves insulin and FSH signaling *inside* the ovary, thereby improving ovarian function and promoting

healthy ovulation. I recommend a combined supplement of myo-inositol and d-chiro-inositol in a 40:1 ratio, which corresponds to the body's normal ratio.

The dose is 2000 to 3000 mg of myo-inositol combined with a small amount of d-chiro inositol. It's safe for long-term use.

Vitamin D is the sunshine vitamin we met in Chapter 6.

How it works: It improves your sensitivity to insulin and promotes the healthy maturation of ovarian follicles [\[181\]](#).

What else you need to know: Ask your doctor to test your vitamin D. If you're deficient, please take at least 2000 IU with food.

Berberine is not a single herb. It is a *phytonutrient* or active constituent of a number of different herbs including goldenseal (*Hydrastis canadensis*), barberry (*Berberis vulgaris*) and the Chinese herb *Phellodendron amurense*. It's also available as a concentrated extract.

Berberine has done well in PCOS clinical trials, outperforming metformin in two large studies [\[182\]](#) [\[183\]](#). It's good treatment for PCOS generally and a great treatment for acne as we'll discuss later in the chapter. Berberine has the nice side benefit of reducing anxiety [\[184\]](#).

How it works: It improves insulin sensitivity, possibly by a beneficial effect on the gut bacteria [\[185\]](#) [\[186\]](#). Berberine also promotes ovulation [\[187\]](#) and prevents the ovaries from making testosterone [\[188\]](#).

What else you need to know: You can take a concentrated berberine extract or a preparation of a whole herb such as *Phellodendron*. Berberine-containing herbs taste bitter so are best taken as a tablet or capsule.

The exact quantity depends on the concentration in the formula. The standard dose for a berberine extract is 500 mg twice daily.

There are a few precautions with berberine. Do not take it if you are pregnant or breastfeeding. And use caution when combining berberine with other prescription medication such as antidepressants, beta-blockers, antibiotics, or immunosuppressants because it can alter the levels of those medications.

Do not take berberine for more than three months in a row because its antimicrobial effects could alter the composition of your gut bacteria. In the short term, berberine's antimicrobial effects are probably beneficial. For example, berberine can improve digestive health and repair intestinal permeability [\[189\]](#). In the long term, it may deplete gut bacteria. I'm

cautious with my own patients and usually recommend taking berberine five days per week, with a two-day break. Then, after three months, I recommend stopping the medicine for at least one month.

If in doubt, please seek professional advice.

The next two supplements are special. They are 1) *zinc* and 2) *peony and licorice combination*. They're special because, in addition to their many other benefits, they have direct *anti-androgen* effects. They can make a good addition to your other *core treatment* such as quitting sugar and taking magnesium. I'll refer to them again in the Anti-Androgen Treatment section.



Every natural treatment discussed in the PCOS chapter works to reduce androgens.

Zinc is one of the key nutrients for period health we met in Chapter 6. As you may recall, it has many benefits including reducing inflammation and regulating the stress response. It's also involved in ovarian function. Zinc deficiency puts you at greater risk of PCOS [\[190\]](#).

How it works: Zinc nourishes ovarian follicles to promote healthy ovulation and progesterone. It also has anti-androgen effects. In a recent trial, zinc was found to improve hirsutism [\[191\]](#).

What else you need to know: I recommend 20 to 50 mg per day taken *directly* after dinner. Do not take zinc on an empty stomach or it will cause nausea.

Peony and licorice combination is an herbal medicine I prescribe all the time for my PCOS patients. It has undergone one small clinical trial, in which it was found to significantly reduce testosterone [\[192\]](#).

How it works: Peony (*Paeonia lactiflora*) inhibits the production of testosterone and promotes the activity of the enzyme aromatase, which converts testosterone to estrogen [\[193\]](#). Licorice (*Glycyrrhiza glabra*) lowers testosterone in women [\[194\]](#) and blocks androgen receptors [\[195\]](#). Together, the two herbs also have a synergistic normalizing effect on pituitary hormones [\[196\]](#).

What else you need to know: The exact quantity of the herb depends on the concentration in the formula, so please use as directed on the bottle.

For best effect, take peony and licorice as a single dose in the morning before breakfast, because that is when your pituitary is most receptive. Pulse the dose by stopping it for the first five days of each cycle. If you don't have cycles, then take it for 25 days on and then five days off. Peony and licorice combination is a powerful medicine. Do not take in combination with fertility drugs. Do not take if you are younger than 18 (because your pituitary-ovarian communication is still developing). Do not start it until you have been off the pill for at least three months (or it may interfere with ovulation). Do not take for more than nine months continuously without having a break (because its effect on your pituitary will attenuate over time).

If you're taking peony and licorice to restore ovulation, then you should not need it for more than nine months in a row. If it is the right treatment, it will work by then, and your periods should stay regular even after you stop taking it.

If you're taking it to lower androgens, then take for six months, then stop for a month, then resume. *Watch your blood pressure!* Licorice raises blood pressure, so please do not take if you already have high blood pressure. If in doubt, please seek professional advice.

Special Topic: Natural progesterone for PCOS

Endocrinologist Dr. Jerilynn Prior recommends *cyclic progesterone therapy* for PCOS. It involves giving natural or micronized progesterone in a pattern that mimics the luteal phase. It works for PCOS because it suppresses luteinizing hormone (LH) and can thereby help to normalize communication between the hypothalamus, pituitary, and ovaries. For more information about cyclic progesterone therapy, please visit the website for *The Centre for Menstrual Cycle and Ovulation Research* [\[197\]](#).

Micronized progesterone also protects against uterine cancer and has a nice *anti-androgen* effect, which we'll discuss later in the chapter.

micronized progesterone



Micronized progesterone is a form of replacement hormone. It is natural or bioidentical progesterone rather than a synthetic progestin. It can be taken as a topical cream or a capsule such as the brand Prometrium .



bioidentical hormone

A bioidentical hormone is a hormone that is structurally identical to your own human hormone.

That covers treatment for insulin resistant PCOS and remember, that's most of you. If you're *certain* you do not have insulin resistance, then please read on to the other types.



A test for blood glucose is ***not*** a test for insulin resistance.

Checklist for insulin resistant PCOS

- Quit sugar
- Take magnesium
- Consider an additional PCOS supplement such as myo-inositol, zinc, or peony and licorice combination
- Consider an additional anti-androgen supplement discussed later in the chapter

Post-Pill PCOS

Coming off the pill can cause symptoms that qualify you for a PCOS diagnosis. It happens for several reasons.

1. Hormonal birth control can cause or worsen insulin resistance [\[198\]](#) [\[199\]](#), and is a major contributor to insulin resistant PCOS.

2. Hormonal birth control suppresses ovulation, which of course, it's meant to do. For most women, ovulation will resume once birth control is stopped. For some of you, ovulation does not return for months or even years. During that time, you may qualify for a PCOS diagnosis.
3. Coming off a "low androgen index" pill such as Yasmin can cause a temporary surge in androgens. While your androgens are high, you may qualify for a PCOS diagnosis, but your androgens should come down again after a year or two. Please see the [How to Come Off Hormonal Birth Control](#) section in Chapter 11.

Post-pill PCOS is the second most common type of PCOS I treat. It's different from other types of PCOS in that it is usually *temporary*. In other words, it's a situation of what Dr. Jerilynn Prior calls *adaptive anovulatory androgen excess*. It doesn't necessarily stem from the underlying genetic tendency of the ovary to overproduce androgens that characterizes other types of PCOS.

Diagnosis of Post-Pill PCOS

Your PCOS is post-pill PCOS if you meet all the criteria for PCOS (irregular periods and elevated androgens) **plus** you do not have insulin resistance **plus** you were fine before you started the pill.

If you were *not* fine before you started the pill, you possibly had PCOS back then, so you do not have post-pill PCOS.

Look at your LH to FSH ratio

With post-pill PCOS, you'll probably have high luteinizing hormone (LH) compared to FSH. That's a common finding with *all* types of PCOS, but with post-pill PCOS it's one of the *only* findings. LH prevents your ovarian follicles from developing properly and stimulates them to make androgens.

Other types of post-pill amenorrhea

PCOS is not the only kind of post-pill pill problem. We met [Christine](#) in Chapter 1, who had post-pill amenorrhea but did not have high LH or androgens, and so she did not qualify for a PCOS diagnosis. Her story was an example of how long it can take to re-establish periods after the pill.

Conventional Treatment of Post-Pill PCOS

There is no conventional treatment for post-pill PCOS. Standard advice is to go back on the pill.

Diet and Lifestyle for Post-Pill PCOS

Stay calm and give it time. It can take a long time to get your period after stopping the pill. It's not a problem with you, but rather with the ovulation-suppressing drug you were given.

Eat well and eat enough. If you don't have insulin resistance, you don't need to strictly avoid sugar (but you shouldn't have too much sugar). Please follow the dietary guidelines discussed in the General Maintenance chapter and please don't undereat.

If you restrict your food thinking it will help your PCOS, you may end up with another condition called hypothalamic amenorrhea (discussed below). Having PCOS puts you at greater risk of hypothalamic amenorrhea [\[200\]](#). In particular, please eat enough carbohydrate because your body needs enough starch to ovulate [\[201\]](#).



If you're avoiding carbs because someone saw polycystic ovaries on ultrasound, you could be on the completely *wrong track*.

Supplements and Herbal Medicines for Post-Pill PCOS

Zinc suppresses androgen and supports ovarian function. As discussed above, it's good for any type of PCOS, but it's my first choice for post-pill PCOS because the pill can cause zinc deficiency.

Peony and licorice combination is a good way to break out of the "stalled hormones" that can occur post-pill. It helps to normalize pituitary hormones [\[202\]](#) and so can promote healthy ovulation. See the previous section for dosing instructions.

Vitex is another popular herb for restoring periods, but it can raise LH and therefore worsen PCOS. *Vitex* is a better choice for prolactin-induced hirsutism and hypothalamic amenorrhea discussed below.

You can expect fairly rapid and permanent improvement of post-pill PCOS. The trick is to get your ovaries going with something like peony and licorice combination. Once you get the ball rolling and start to ovulate, you should be able to stop the supplements.



Karla: Post-pill PCOS

Karla was 33 when she stopped Yasmin to try for pregnancy. She'd been on it for the previous seven years for birth control. Before taking the pill, her periods were regular with a 30-day cycle. Karla got her period straight away, which was great, but her cycles were about 50 days long, and her skin broke out. Her fertility specialist thought she was having anovulatory cycles (not ovulating), and I agreed. He diagnosed her with PCOS based on the irregular cycles, the new symptom of acne, high AMH (anti-Müllerian hormone) and high testosterone.

Karla was only ten months off the pill, but already looking at the ovulation-stimulating drug clomiphene.

"Whoa. Whoa," I said. "You haven't been ovulating, but that doesn't mean you *can't* ovulate. You were fine before the pill. All this could improve on its own with just a bit more time."

I asked her about fertile mucus, and she thought she'd seen some just the week before.

"Sounds like you might have ovulated even before you even came to see me," I said. "So, you'll probably get a period next week. In the meantime, I think we should wait on any herbal ovulation-promoting treatment. Instead, I'd like to offer you zinc, which will nourish your ovaries and skin."

I asked her to take 30 mg of zinc after dinner and to reduce both sugar and cow's dairy to help with her post-pill acne.

Karla had a period a week later which meant she probably had ovulated when she saw the mucus. She had four more cycles and then became pregnant.

It remains to be seen if Karla will have any PCOS symptoms after having her baby. I doubt she will. In Karla's case, the irregular periods, acne, and even elevated testosterone were all *temporary* as her body adjusted to being off Yasmin .

Know when to let go of your PCOS diagnosis

You qualify for a PCOS diagnosis based on your *current set of signs and symptoms*. If you can reach the point where you no longer have symptoms, then you no longer qualify for a PCOS diagnosis. You will always have a *susceptibility* to PCOS.

Checklist for post-pill PCOS

- Stay calm and give it time
- Eat enough
- Consider zinc or peony and licorice combination
- Consider an additional anti-androgen supplement discussed later in the chapter

Inflammatory PCOS

What if you don't fit into either of the previous types of PCOS? You could be quite frustrated by now. Your PCOS isn't driven by insulin resistance or coming off the pill. By what then, is it driven?

Inflammatory PCOS is driven by inflammation and environmental toxins. Inflammation also plays a role in the previous types of PCOS—and indeed, in any period problem—but it is the *primary* driver of inflammatory PCOS [\[203\]](#).

How does inflammation drive PCOS? As we saw in Chapter 6, inflammation disrupts hormone receptors and suppresses ovulation. It also stimulates both your adrenal glands and ovaries to make more androgens [\[204\]](#).

Inflammation can come from insulin resistance, in which case, please see the insulin resistant PCOS section. Inflammation can also come from smoking, inflammatory foods, environmental toxins, and digestive problems.

Diagnosis of Inflammatory PCOS

Your PCOS is inflammatory PCOS if you meet all the criteria for PCOS (irregular periods and elevated androgens) **plus** you do not have insulin resistance **plus** your periods were not affected by the pill **plus** you have signs and symptoms of inflammation.

Signs and symptoms of inflammation

- Unexplained fatigue
- Headaches
- Joint pain
- Skin conditions such as eczema and psoriasis

Conventional Treatment of Inflammatory PCOS

There is no conventional treatment for inflammatory PCOS.

Diet and Lifestyle for Inflammatory PCOS

First and foremost, please follow the ***anti-inflammatory diet*** as outlined in Chapter 6. That means avoiding wheat and dairy, and possibly avoiding other common food sensitivities such as eggs.



Avoiding inflammatory foods is more effective for inflammatory PCOS than *any* supplement.

Please be sure to identify and treat any underlying digestive problem, and reduce your exposure to environmental toxins such as pesticides, plastics, and mercury. See the [Inflammation section](#) in Chapter 11.

Supplements for Inflammatory PCOS

Zinc is once again my favorite prescription for this type of PCOS. In addition to its many other benefits, zinc reduces inflammation, improves

digestive health, and promotes healthy detoxification.

Probiotic supplements are beneficial bacteria in powder or capsule form. You can also eat foods that are rich in beneficial bacteria, such as naturally fermented yogurt or sauerkraut.

How they work: Probiotics improve intestinal health and reduce inflammation. They also aid in the detoxification of mercury [205].

What else you need to know: Please see the [Digestive Health](#) section in Chapter 11 for advice about probiotics.

N-acetyl cysteine (NAC) is a version of the amino acid cysteine. It's been trialed with PCOS patients and found to be successful at restoring regular ovulation [206].

How it works: It reduces inflammation and promotes the detoxification of environmental toxins. NAC also improves insulin sensitivity.

What else you need to know: NAC has the nice side benefit of reducing anxiety. Too much can thin your stomach lining so do not take if you have gastritis or stomach ulcers. I recommend 500 to 2000 mg per day.

Melatonin is the sleep hormone we met in the last chapter. It's made by the pineal gland in your brain, but it's *also* made by your ovaries. Melatonin supplements may restore regular ovulation in women with PCOS [207].

How it works: Its protects the ovarian follicle from oxidative stress and promotes ovulation.

What else you need to know: I recommend 0.5 to 3 mg at bedtime. It can also be used topically for hair loss. Please see the androgenetic alopecia section below.

Checklist for inflammatory PCOS

- Avoid wheat and cow's dairy
- Identify other food sensitivities
- Fix any digestive problems
- Consider zinc
- Consider an additional anti-androgen supplement discussed later in the chapter

Adrenal PCOS

Hopefully, you have identified your type of PCOS before now. Chances are it is the first type, insulin resistant PCOS. If so, then please treat that. If

not, here's one more to consider.

Your PCOS is adrenal PCOS if you:

- Meet all the criteria for PCOS
- Do **not** have insulin resistance
- Were **not** negatively affected by coming off the pill
- Have **no** signs and symptoms of inflammation
- Have **normal** ovarian androgens (testosterone and androstenedione) but elevated *adrenal androgens* (DHEAS)

If you need a visual of these criteria, please refer again to the PCOS flow-chart above (*image 9*).

Most women with PCOS have an elevation of one or *all* types of androgens:

- Testosterone from the ovaries
- Androstenedione from the ovaries and adrenal glands
- DHEAS (dehydroepiandrosterone sulfate) from the adrenal glands

If you have elevated ovarian androgens, then please refer to one of the earlier types of PCOS. This is the section for when you have *only* elevated DHEAS, but normal testosterone and androstenedione.

If you have elevated DHEAS, your doctor should first rule out other reasons such as high prolactin or nonclassic congenital adrenal hyperplasia (NCAH), discussed earlier in the chapter. Once those conditions have been ruled out, you're left with the diagnosis of adrenal PCOS [\[208\]](#), which accounts for about 10 percent of PCOS [\[209\]](#), and is quite different from the classic ovarian PCOS discussed so far.

Like ovarian PCOS, adrenal PCOS is associated with endocrine disrupting chemicals [\[210\]](#) and an underlying genetic *susceptibility*.

Unlike ovarian androgen PCOS, adrenal PCOS is *not* driven by insulin resistance or impaired ovulation. Instead, it's driven by the stress response system or HPA (adrenal) axis. In other words, it's driven by *stress* [\[211\]](#).

Adrenal PCOS may be caused by stress around the time of puberty [\[212\]](#).

Conventional Treatment of Adrenal PCOS

There is no conventional treatment for adrenal PCOS, although some doctors used to prescribe low-dose hydrocortisone [213]. Hydrocortisone works by reducing the production of DHEAS. It's also prescribed for nonclassic congenital adrenal hyperplasia (NCAH).

Natural Treatment of Adrenal PCOS

The best treatments are all the ones we discussed in Chapter 6 for regulating the stress response system or HPA (adrenal) axis. They include:

- Rest and joy
- Relaxation techniques like meditation, massage, and yoga
- Maintaining a stable blood sugar
- Magnesium
- Zinc
- B-complex
- Rhodiola

Checklist for adrenal PCOS

- Reduce stress
- Consider supplements to regulate the HPA axis
- Consider an additional anti-androgen supplement discussed later in the chapter



There is some overlap between these PCOS types. For example, inflammation is also a major factor in both the insulin resistant and adrenal types of PCOS.

Still Confused?

What if you've been told you have PCOS, but you do not meet any of the criteria discussed above? You do not have insulin resistance. You did not develop PCOS after the pill. You have no obvious signs of inflammation or exposure to environmental toxins.

Go back to the drawing board. First of all: Do you truly have PCOS? Do you have either high androgens on a blood test or clear signs of androgen excess?

If you do *not* have androgen excess, and your *only* symptom is a lack of periods (and maybe acne), then you could have hypothalamic amenorrhea, which is discussed below. Remember, an ultrasound finding of polycystic ovaries is not enough to diagnose PCOS.

If you *do* have PCOS, but meet none of the above criteria, then your problems may stem from something a bit less obvious. Before we leave the topic of PCOS, let me share some *hidden drivers* of PCOS that I see with some of my patients. Hidden drivers are things that—once corrected—can improve or reverse androgen excess.

Hidden Drivers of PCOS

Many things can impair ovulation and promote excess androgens. They include:

Too much soy or other phytoestrogens because they can suppress ovulation. An indication of high phytoestrogen intake is a high SHBG reading on a blood test.

Thyroid disease because hypothyroidism impedes ovulation and worsens insulin resistance [\[214\]](#).

Vitamin D deficiency because your ovaries need vitamin D.

Zinc deficiency because your ovaries need zinc.

Iodine deficiency because your ovaries need iodine.

Vegetarian diet, either because it has too many phytoestrogens or because it's causing nutritional deficiency.

Elevated prolactin because it increases DHEA.

Too little food or too few carbs because you need carbs to ovulate. If you're undereating, then you've slipped into hypothalamic amenorrhea which I discuss below.

The great thing about identifying a *hidden* driver of PCOS is that once you correct it, your symptoms should improve fairly quickly.

Treatment of Facial Hair, Acne, and Female Pattern Hair Loss

Facial hair, acne, and androgenetic alopecia (female pattern hair loss) are all common symptoms of PCOS, but they can occur for other reasons.

This section is the treatment section for those symptoms whether or not you have PCOS.

Treatment of Facial Hair (Hirsutism)

Conventional treatment includes the pill or the anti-androgen drugs cyproterone (Androcur) and spironolactone (Aldactone).

Natural treatment is to treat PCOS (if you have PCOS) and also to choose one of the supplements listed later in the chapter in the Natural Anti-Androgen section.

You will also require mechanical hair removal such as tweezing, waxing, laser, or electrolysis.

Facial hair is a frustrating symptom because even with the best treatment, it can take twelve months to start to improve.

Treatment of Acne

Conventional treatment includes the pill, spironolactone (Aldactone), and isotretinoin (Accutane), which is horrible. Isotretinoin's mechanism of action is to alter DNA expression, and it can cause serious side effects such as depression [\[215\]](#), inflammatory bowel disease, and osteoporosis [\[216\]](#). I beg you not to take it.

Natural treatment includes the following:

- Treat PCOS, if you have PCOS
- Choose one of the supplements listed later in the chapter in the Natural Anti-Androgen section
- Choose one or more of the following acne treatments

Acne treatments

The following treatments are effective for acne regardless of the underlying cause of PCOS, post-pill, or otherwise.

Quit sugar to reduce a hormone called insulin growth factor or IGF-1. IGF-1 is the perfect storm for acne because it increases sebum, keratin, and inflammation [\[217\]](#).

Avoid cow's dairy to reduce inflammation and IGF-1 hormone.

According to the 2005 Nurses' Health Study, women who drink less milk are less likely to suffer acne [\[218\]](#). You can still have non-inflammatory dairies, such as goat, sheep, and Jersey milk. See the [Dairy Products](#) section in Chapter 6.

Address digestive problems because acne can be caused by stomach acid deficiency and SIBO and other digestive problems. See the [Digestive Health](#) section in Chapter 11.

Address histamine intolerance which is the condition of excess histamine we discussed in the last chapter. High histamine foods include fermented foods and cheese. They can worsen acne.

Zinc has done well in clinical trials for acne [\[219\]](#). It works by reducing keratin and therefore keeping pores open. Zinc also kills bacteria, reduces inflammation, and lowers androgens.

Berberine is a natural antibiotic, so it kills the bacteria that cause acne. It also reduces inflammation and IGF-1. In one clinical trial, just four weeks on berberine improved acne by 45 percent [\[220\]](#).

DIM (diindolylmethane) is a phytonutrient derived from vegetables such as broccoli. It's discussed in the anti-androgen section below.

Even with the best treatment, acne can take six months to improve. And remember, when you come off Yasmin, your skin will be at its worst after about six months (just when you're ready to give up and go back on the pill). Please see the Post-Pill Acne section in Chapter 2.

Treatment of Female Pattern Hair Loss

Female pattern hair loss or androgenetic alopecia is the long-term thinning type of hair loss caused by male hormones. It's different from the temporary hair loss caused by thyroid or iron deficiency. (For a full discussion of all the types of hair loss, please see the [Hair Loss](#) section in Chapter 11.)

Conventional treatment includes the pill, cyproterone (Androcur), spironolactone (Aldactone), and the topical drug minoxidil or Rogaine .
Natural treatment includes the following:

- Treat PCOS if you have PCOS
- Choose one of the supplements listed later in the chapter in the Natural Anti-Androgen section
- Choose one of the following topical treatments

Topical treatments for androgenetic alopecia

Rosemary inhibits 5-alpha reductase which is the enzyme that converts testosterone to the more potent hormone dihydrotestosterone (DHT) [221]. For topical use, put four drops of rosemary essential oil into a tablespoon of a carrier oil like jojoba oil. Massage gently into the scalp for 30 minutes before washing your hair. Use three times per week.

Melatonin reduces oxidative stress at the hair follicle and promotes hair growth [222]. Apply a 0.1 percent solution once daily before going to bed. Even with the best treatment, androgenetic alopecia can take months or even years to improve.

Anti-Androgen Treatments



anti-androgen

Anti-androgens (also known as androgen antagonists or testosterone blockers) are drugs or supplements that reduce androgens or block their effects.

You need this section if you:

1. Have PCOS and have already put in place the *core treatment* for your type of PCOS.
2. Have androgen symptoms for another reason such as from a post-pill androgen surge.



Anti-androgen supplements are not a *stand-alone* treatment for PCOS. They're to be used as adjuncts to the other core treatments discussed earlier in this chapter.

Conventional anti-androgen treatment includes the drugs cyproterone (Androcur) and spironolactone (Aldactone).

Natural anti-androgen treatment includes the following:

Zinc, which did well in a recent clinical trial where it significantly improved hirsutism in just eight weeks [223]. Zinc works by *normalizing* hormones. It will not push testosterone below normal.

Peony and licorice combination reduces serum testosterone. I prescribe it mainly for PCOS.

DIM (diindolylmethane) is a phytonutrient derived from vegetables such as broccoli, brussels sprouts, cabbage, and kale. It blocks androgen receptors [224]. It also inhibits the aromatase enzyme, and so could have the unwanted effect of decreasing estrogen. I regularly prescribe DIM for both acne and hirsutism. I recommend 100 mg per day.

Micronized or natural progesterone inhibits 5-alpha reductase and blocks androgen receptors. The best way to obtain progesterone is to ovulate and *make your own*. You can also supplement it.

Reishi mushroom (*Ganoderma lucidum*) inhibits 5-alpha reductase [225]. Reishi has many other health benefits including immune enhancement and stabilization of the HPA (adrenal) axis.

Vitex agnus-castus lowers prolactin, improving prolactin-induced androgen excess and hirsutism. High prolactin is not typical of PCOS, which is why I usually don't prescribe *Vitex* for PCOS. I do prescribe it for hypothalamic amenorrhea, discussed below.

Saw palmetto (*Serenoa repens*) inhibits 5-alpha reductase and did well in a recent clinical trial where it was combined with green tea, vitamin D, melatonin, and soy [226]. Like DIM, saw palmetto might have the unwanted effect of decreasing estrogen. I never prescribe saw palmetto, primarily because I prefer other treatments such as zinc, and peony and licorice combination.

You don't need *all* the supplements discussed in this chapter. Start with your core PCOS treatment such as *quitting sugar* and taking magnesium, and then choose one additional anti-androgen treatment such as zinc.



Hypothalamic Amenorrhea (HA)

Hypothalamic amenorrhea is also called *functional* hypothalamic amenorrhea (FHA). It is defined as the lack of a menstrual period for more than six months when *no medical diagnosis can be found*.

The “no medical diagnosis” part is important. It means your doctor should have ruled out other conditions such as thyroid disease, celiac disease, PCOS, high prolactin, and others.

Post-pill amenorrhea

If you've just come off the pill, you may just need a bit more time, as did [my patient Christine](#) in Chapter 1. Or you may benefit from some of the treatments discussed in this section. Please also see the How to Come Off Hormonal Birth Control section in Chapter 11.

The wisdom of the hypothalamus

If there is no medical reason for your lack of periods, then it's because your hypothalamus (your master hormonal command center) has decided you will not ovulate. Why would it make such a decision? Your hypothalamus is not trying to be mean. It's trying to *help you* because it perceives that something is not right in your world. You are either stressed or not getting enough to eat, so your hypothalamus does not want you to attempt the difficult business of bringing a baby into the world. It temporarily dials back reproduction—just until things get better.

But wait? What if you don't actually want to make a baby? You just want periods. From the perspective of your hypothalamus, it's the same thing. Being healthy enough to make a baby is how you are healthy enough to have a period.

Hypothalamic amenorrhea is not a disorder. It's a *normal* response to undereating or stress.



Let's now look at the two main causes of hypothalamic amenorrhea: Undereating and stress.

Eat More

If you were my patient, I would start with one simple question:

Do you feel like you're getting enough to eat? For example, yesterday—did you feel *satisfied* with your food?

I like this question because it sends the message that you *deserve* to feel satisfied and be fully nourished. As a woman, you need more food than you've been led to believe.

Undereating can cause you to lose your periods, and, as we saw in Chapter 5, you don't have to be underweight. Undereating can be a problem when you are normal weight or even *overweight*. Your hypothalamus cares less about body weight and more about whether you eat enough to keep up with your activity level.



You can exercise as long as you *eat enough*.

To get a period, you need to be fully nourished in *every respect*. That means enough calories and enough micronutrients such as zinc and iodine. It also means enough of *all* of the macronutrients including protein, fat, and *carbohydrate*.

Undereating carbohydrate can impair hypothalamic signaling and cause amenorrhea—even if you eat enough calories [\[227\]](#).

If you feel better on a low-carb diet, then ask yourself:

- Is it because you stopped having wheat? If so, your better strategy is to avoid wheat, but continue to have rice, potatoes, and oats.

- Is it because you've relieved a digestive problem? If so, your better strategy is to fix your digestion. See Chapter 11.

Eating disorder

If you think you might have an eating disorder, then please understand that you're not alone. The majority (63 percent) of young women with amenorrhea go on to be diagnosed with an eating disorder [\[228\]](#).

Approach it with self-love and self-forgiveness, and *reach out for professional help*. I've provided the names of reputable organizations in the Resources section.

In addition to seeking help from a professional psychologist, here are some simple ideas:

- *Unfollow* any social media accounts that glorify undereating or skinny bodies.
- Hang out with friends who enjoy eating and are comfortable with food.
- Never use the word “bad” or “clean” to refer to food or eating.
- Let go of being perfect at anything—including your diet.

Even once you start eating more, you'll still have to wait at least four months to get a period. Why? Because that's how long it takes your ovarian follicles to travel all the way to ovulation.



If you cannot gain weight no matter how much you eat, you might have celiac disease or gluten sensitivity. Please speak to your doctor.

Stress Less

The best way to reduce stress is to follow all the guidelines described in Chapter 6 for HPA axis dysfunction.

Conventional Treatment of Hypothalamic Amenorrhea

Hypothalamic amenorrhea is one condition where the conventional and natural treatment recommendations are the same: Eat more and stress less.

Your doctor may also recommend the pill, but it won't help anything. Remember, pill bleeds are not periods. And the pill has been shown to *impair recovery from hypothalamic amenorrhea* [229].

Supplements and Herbal Medicines for Hypothalamic Amenorrhea

The most important thing for hypothalamic amenorrhea is to *eat more*. Unless you also do that for at least four months, none of the following supplements can do anything to help you.

Magnesium is [The Miracle Mineral for Periods](#) and is helpful here again.

How it works: It helps you cope with stress and regulates your hypothalamus.

Ashwagandha (*Withania somnifera*) is an herbal medicine that's been used for thousands of years in the Ayurvedic medical tradition of India. It was traditionally given as an energy and reproductive tonic. It helps you to cope with stress.

How it works: It reduces anxiety and counters the long-term effects of stress such as blood sugar instability, insomnia, depression, and suppression of the hypothalamus.

What else you need to know: The exact quantity of the herb depends on the concentration in the formula, so please use as directed on the bottle. Ashwagandha can be taken as tea, liquid, or tablet. It is a safe herb with no contraindications or interactions. For full benefit, please take it twice daily for at least three months. It can be used long-term.

Vitex agnus-castus (chaste tree or chasteberry) is a medicine prepared from the berries of a large Mediterranean tree. In ancient times, it was purportedly used to suppress the libido of monks (hence the name). Fortunately, it does not have that effect in women.

How it works: It promotes ovulation by protecting your hypothalamus from chronic stress and by preventing your pituitary gland from making too much prolactin. *Vitex* also contains opiate-like constituents, which calm your nervous system [230].

What else you need to know: I recommend a low dose (200 mg) of a standardized extract, which is the dose used in the clinical trials [231].

Less concentrated formulas (dry herb, as opposed to extract) will need to be taken at a higher dose of 1000 to 2000 mg.

For best effect, please take *Vitex* as a single dose first thing in the morning before breakfast, because that's when your pituitary is most receptive. Pulse the dose by stopping it for a few days each month. For amenorrhea, I usually recommend 25 days on and then five days off. If you have periods (but are using it for PMS), I recommend you stop it for five days from the start of each period.

Vitex is a powerful herb, and there are a few precautions. Do not take in combination with fertility drugs. Do not take if you are younger than 18 (because your pituitary-ovarian communication is still developing). Do not start it until you have been off the pill for at least three months (or it may interfere with ovulation). Do not take for more than six months continuously (because its effect on your pituitary can *attenuate* over time). Like the herbal medicine peony discussed earlier, you should not need *Vitex* for longer than six months. If it is the right treatment, it will work within four months. Your periods should then stay regular even after you stop taking it. If in doubt, please seek professional advice. Be cautious with *Vitex* if you have PCOS because it can increase LH and worsen the condition.

Vitex is also a great treatment for premenstrual syndrome, which is coming in Chapter 8



Be careful with soy and other phytoestrogens such as flaxseed and legumes because they inhibit FSH and can cause amenorrhea [\[232\]](#). An indication of high phytoestrogen intake is a high SHBG reading on a blood test.

High Prolactin

Prolactin is a pituitary hormone that promotes lactation and regulates hormones. Too much prolactin inhibits ovulation.

Severely elevated prolactin is a serious medical problem that can stop periods completely.

Mildly elevated prolactin can cause irregular periods, breast pain, and loss of libido. It can also cause androgen excess by two different mechanisms.

1. Prolactin increases the adrenal androgen DHEA [\[233\]](#)
2. Prolactin up-regulates 5-alpha reductase leading to more dihydrotestosterone (DHT) [\[234\]](#)

High prolactin is easy to diagnose with a simple blood test.

What Causes High Prolactin?

Very high prolactin (greater than 1000 mIU/L or 50 ng/mL) is usually the result of a benign pituitary tumor called a prolactinoma. It requires medical diagnosis and management. Your doctor will probably order an imaging study such as an MRI (magnetic resonance imaging study) and treat you with the drug bromocriptine, which reduces prolactin. There is no natural treatment for an active prolactinoma.

Moderately high prolactin (greater than 480 mIU/L or 23 ng/mL) can be caused by prolactinoma, thyroid disease, alcohol, or medications such as hormonal birth control, stomach acid tablets, and some types of psychiatric and blood pressure medications. It requires medical diagnosis and management.

Mildly high prolactin (around 480 mIU/L or 23 ng/mL) is common, and cannot be diagnosed by a single result. Why? Because your prolactin might have been *temporarily* elevated by any of the following:

- Sex
- Exercise
- Alcohol
- Eating
- Sleep
- Dehydration
- Stress
- Luteal phase (post-ovulation)
- Mild thyroid disease
- Hormonal birth control

For accuracy, you'll want to recheck your prolactin under the following conditions:

- Follicular phase
- Between 8 a.m. and 12 p.m.
- Fasting
- Hydrated
- Not directly after exercise or sex
- Relaxed
- Not on hormonal birth control



Mildly elevated prolactin is *sometimes* a feature of both hypothalamic amenorrhea and PCOS.

Once your doctor has ruled out a medical explanation for your high prolactin, you can consider using natural treatments

Diet and Lifestyle to Lower Prolactin

Reduce alcohol, especially beer, because barley stimulates prolactin. That's why beer was traditionally prescribed to increase milk supply. Do not exceed four alcoholic drinks per week.

Reduce stress with yoga, meditation, and long slow walks.

Herbal Medicine to Reduce Prolactin

Vitex is the best natural treatment to lower prolactin. For dosing instructions, please see the *Vitex* section above.

A Final Word About Irregular Periods

Irregular periods can be frustrating. It's difficult to obtain an accurate diagnosis, and even once you do, there are so many different natural treatments to choose from.

My experience with thousands of patients is that the mystery of irregular periods can eventually be solved. Go deeper with your diagnosis. Try to figure out *why* you do not ovulate. Recruit your doctor to help you, using

the list of questions in the [How to Talk to Your Doctor section](#) in Chapter 11.

Once you select a treatment, please commit to it for *at least three months*. You'll need to wait at least that long to see any result because that's how long it takes your ovarian follicles to journey to ovulation.

Take heart. Keep going, and remember: Your body *wants* to have regular periods.

Chapter 8



The PMS Solution: 3 Steps to Hormonal Resilience

This is the chapter that many of you have been waiting for. What, for goodness sake, can be done to relieve premenstrual irritability, breast pain, acne, headaches, and other symptoms?

Let me start by saying flat out that for most of you, premenstrual syndrome (PMS) can become a *thing of the past*. I am serious. PMS responds well to natural treatment, and it responds quickly. It will be the first thing to change on your monthly report card.

I love to hear patients say: “I was surprised when my period just arrived. I didn’t even feel it coming.”

No irritability. No headache. No food cravings. It *is* possible.

Does that surprise you? Eighty percent of women report some physical and emotional changes in the second half of their cycle. Twenty percent of women experience symptoms severe enough to seek medical help.

No wonder PMS is widely portrayed as something universal and inevitable. Yet here I am, telling you it does not need to be that way. I stand by what I say. PMS is *common*, but it’s not inevitable. In fact, PMS is curable. That’s why I’ve dedicated a full chapter of *Period Repair Manual* to a PMS solution.

A Controversial Diagnosis

PMS was first described in the early 1980s and has been controversial ever since. It’s controversial for a couple of reasons.

First of all, the term PMS is subject to misuse. Too often, it’s used to trivialize any and all of women’s emotions, which is a problem. As a woman (and a human being), you have the *right* to emotions. Your emotions should not be dismissed by your partner or family member as simply “hormonal.” In fact, I reject the very word *hormonal* when used as an adjective to describe a woman. It’s crazy to me that *hormonal* has come

to be an insult. It implies that female hormones themselves are negative for mood, which, as we'll discover later in the chapter, is simply not true.

The second reason PMS is controversial is that it refers not to one thing, but rather to a large and varying set of symptoms. In its broadest interpretation, PMS can refer to virtually *any* symptom you experience two out of every four weeks.

PMS Symptoms

Despite the controversy, I am convinced that PMS is real.

The most commonly reported emotional symptoms are irritability, anxiety, depression, and weepiness. The most commonly reported physical symptoms are sleep disturbance, fluid retention, abdominal bloating, palpitations, joint pain, headaches, brain fog, food cravings, breast pain, and pimples. To qualify as PMS, symptoms must occur during the ten days *before* your period and then disappear during or shortly after your bleed.

Premenstrual magnification

If your PMS symptoms are a temporary *worsening* of symptoms you tend to anyway (e.g., headaches, digestive problems, acne, and sugar cravings), then it is not PMS. It's *premenstrual magnification*.

Premenstrual magnification is a bit different from premenstrual syndrome in that your best strategy is to treat your *underlying* condition. That way, it will not be aggravated by the natural shift to inflammation that occurs at the end of your luteal phase. You may also benefit from some of the strategies discussed in this chapter.

What Causes PMS?

Your hormones themselves are *not to blame for PMS*. Neither estrogen nor progesterone is inherently negative for mood or any other thing. Far from it. Your hormones are *beneficial*.

Remember from previous chapters that both estrogen and progesterone are powerful enhancers of mood and metabolism.

For example, when estrogen rises in your follicular phase, you will feel great because estrogen boosts serotonin and gives you stronger muscles and

better insulin sensitivity. Wonderful, to a point. If your estrogen goes too high, you will feel less than wonderful.

The Ups and Downs of Estrogen

Estrogen is like an interesting and charismatic friend. She's great to have around, but she can become a bit overwhelming after a while. Some estrogen is *great*. Too much estrogen is *overstimulating* and can cause breast pain, fluid retention, irritability, and headaches.

The departure of estrogen can also cause symptoms. Your estrogen cannot stay high forever, and you wouldn't want her to. Estrogen has to drop at the end of your cycle, and when she does, she brings serotonin and dopamine down with her. The higher your estrogen the further your fall. The *withdrawal* from estrogen can cause fatigue, night sweats, and migraines.

Progesterone to the Rescue

At the same time that estrogen is going up and down, progesterone should be coming to your rescue. If you can make enough progesterone, it will soothe you and shelter you from the ups and downs of estrogen.

Recall from Chapter 4 that progesterone *counterbalances* estrogen. Progesterone has other *superpowers* such as converting to the neurosteroid *allopregnanolone* which calms your brain just like the neurotransmitter GABA.

If you can make enough progesterone, and if you are sufficiently *sensitive* to it, then you will be *soothed* by allopregnanolone all the way to your period. If on the other hand, you don't make enough progesterone, or if your progesterone drops away too quickly, then you may experience anxiety [\[235\]](#).

The conventional approach

The conventional solution to PMS and hormonal fluctuation is to flat-line your hormones with hormonal birth control. Yes, that stabilizes things, but not in a good way. You will no longer have hormonal fluctuation, but that's because you will no longer have hormones. You throw the baby out with the bathwater.



Hormonal birth control can also cause symptoms, but they're *drug side effects*—not PMS [\[236\]](#).

Hormonal Resilience

The natural approach to hormonal fluctuation is different. It does not switch off hormonal fluctuation. Instead, it embraces the shift as a normal and beneficial process. Your hormones fluctuate because you make them in a cyclical pattern with ovulation. That is the only way you *can* make them.

Put it this way: If you're going to have hormones, they're going to fluctuate.

You don't need to flat-line your hormones. You need only be able to *adapt* to their ups and downs. That ability to adapt to hormonal fluctuation is what I call hormonal resilience.

New research suggests there's a genetic component to hormonal resilience. The cells of women with premenstrual dysphoric disorder (PMDD) respond differently to hormones compared to women without the condition [\[237\]](#).



PMDD

Premenstrual dysphoric disorder is a condition of severe premenstrual depression, irritability, or anxiety. It affects about 1 in 20 women.

So, you may have been lucky enough to be born with genes that protect you from premenstrual symptoms. If not, you can protect yourself by *cultivating hormonal resilience* in three easy steps:

1. Enhance progesterone and GABA.
2. Stabilize estrogen and metabolize it properly.
3. Reduce *inflammation* to calm your hormone and neurotransmitter receptors.

Did you notice the third point? Reduce inflammation. Why is that important for PMS?

The Role of Inflammation

Inflammatory cytokines put you at greater risk of PMS [\[238\]](#). Why? Because, as we saw in Chapter 6, *chronic inflammation distorts hormonal communication*.

More precisely, inflammation impairs both the manufacture of progesterone and the responsiveness of progesterone receptors. So, you end up needing *more* progesterone just to be able to feel its soothing effect.

Inflammation also down-regulates GABA receptors, which further impairs your response to progesterone and worsens PMS.

Finally, inflammation interferes with estrogen detoxification and *hyper-sensitizes* you to estrogen.

In summary, inflammation can cause 1) less progesterone and GABA, and 2) more estrogen.

Inflammation is the *perfect storm for PMS*.

Fortunately, you can reduce inflammation with the anti-inflammatory strategies we discussed in Chapter 6. You can also harness the natural anti-inflammatory effects of *progesterone* [\[239\]](#).

Let's start with progesterone.

Enhance Progesterone and GABA

Progesterone is central to the PMS story because it shelters you from the ups and downs of estrogen. It also reduces inflammation and calms your mood by enhancing the neurotransmitter GABA.

You want more progesterone *and* more GABA so you can experience a greater benefit from progesterone. This section will give you strategies for both progesterone and GABA.



More progesterone and more GABA can result in *less* PMS [\[240\]](#).

How do you know if you have enough progesterone?

Symptoms of low progesterone include PMS, fertile mucus during the premenstrual phase, premenstrual bleeding or spotting, and prolonged or heavy menstrual bleeding.

You can measure progesterone with a mid-luteal blood test or by tracking your temperatures. Remember, you're looking for a consistent rise in temperature in your luteal phase. See the [Progesterone Deficiency](#) section in Chapter 5.

As we've seen in previous chapters, progesterone is difficult to make and difficult to hold on to. No wonder premenstrual symptoms are so common!

Diet and Lifestyle to Enhance Progesterone and GABA

As we saw in the [Roadmap to Progesterone](#) section in chapter 4, your progesterone in any given cycle is the result of the health of your *corpus luteum* which is the result of the health your ovarian follicle during all its hundred-day journey to ovulation.

Boosting progesterone is a long-term project.

Reduce inflammatory foods

By reducing inflammatory foods such as sugar, wheat, and cow's dairy, you can support progesterone in two ways.

1. Less inflammation leads to better ovulation, and therefore *more* progesterone.
2. Less inflammation enhances the sensitivity of both progesterone and GABA receptors.

Of all the inflammatory foods, cow's dairy seems to be the most significant for PMS, probably because it can trigger the release of histamine.

Special Topic: The Curious Link Between PMS and Histamine

If your PMS symptoms include headaches, anxiety, or brain fog, then you might be suffering *histamine intolerance*. As you may recall from the [Histamine Intolerance](#) section in Chapter 6, histamine is a normal part of your immune system, but too much histamine can cause symptoms.

Histamine intolerance is often worse just before the period because *estrogen increases histamine* and *histamine increases estrogen*.

Progesterone, on the other hand, *decreases* histamine, which is one way that progesterone relieves PMS.

Treatment for histamine intolerance:

- Enhance progesterone or take progesterone.
- Reduce *histamine-stimulating* foods such as dairy and alcohol [\[241\]](#).
- Reduce *histamine-containing* foods such as red wine, cheese, bone broth, and fermented foods.
- Take vitamin B6, which upregulates the DAO enzyme that breaks down histamine [\[242\]](#).

Histamine intolerance can also be a factor in period pain and ovarian cysts, which we'll discuss in Chapter 9.



Histamine reduction is a big part of why vitamin B6 and natural progesterone work so well for PMS and other conditions.

Reduce alcohol

Alcohol reduces allopregnanolone [\[243\]](#) and interferes with progesterone's soothing effect. Alcohol can also worsen histamine intolerance. You can probably enjoy the occasional wine or beer, but for the sake of your progesterone and PMS, please do not exceed four drinks per week.

Reduce stress

Stress has a huge impact on PMS. A high level of perceived stress doubles the risk of severe PMS [\[244\]](#). There are a few things going on. First,

adrenaline directly blocks progesterone receptors and depletes GABA. That alone can cause PMS.

In the longer term, stress also impairs ovulation and depletes progesterone. Finally, low progesterone can have a further destabilizing effect on your stress response or HPA (adrenal) axis [\[245\]](#). That's why there can be a bit of a delayed effect with stress. Stress *now* can lead to PMS weeks later.

Stress-reduction is *critical for hormonal resilience*. If you suffer PMS, you now have an excuse to say:

“To balance my hormones, I need to go for that walk, or book a massage, or spend the entire afternoon reading a novel.”

Exercise

Exercise helps PMS [\[246\]](#) because it reduces both stress and inflammation.

Supplements and Herbal Medicines to Enhance Progesterone and GABA

Magnesium is my front-line treatment for PMS. It improves premenstrual symptoms so dramatically [\[247\]](#) that some scientists have suggested that magnesium deficiency is the main *cause* of PMS [\[248\]](#).

How it works: It reduces inflammation, regulates the stress response, and enhances GABA activity. Magnesium also aids in the manufacture of steroid hormones, including progesterone.

What else you need to know: Food sources of magnesium include nuts and seeds and dark leafy vegetables, but food sources of magnesium are often not enough. I recommend a supplement of 300 mg magnesium glycinate per day. Please see the Magnesium section in Chapter 6.

Vitamin B6 is the next strongest treatment for PMS. A study in the British Medical Journal found it to be effective for both PMS and the more severe condition of premenstrual dysphoric disorder (PMDD) [\[249\]](#).

How it works: Vitamin B6 (also called pyridoxal-5-phosphate or P5P) works on almost every aspect of the PMS story. It's essential for the synthesis of both progesterone and GABA. It reduces inflammation and

assists with the healthy detoxification of estrogen. Finally, vitamin B6 is a natural diuretic and relieves histamine intolerance.

What else you need to know: I recommend 20 to 150 mg per day of vitamin B6 in divided doses spaced out during the day (e.g., 50 mg twice daily). You can expect to feel its benefits within one hour. Vitamin B6 works well in *combination with magnesium* as we saw in [Amy's](#) story in Chapter 6. Long-term supplementation of more than 200 mg can cause nerve damage.



Magnesium plus vitamin B6 is my favorite treatment for PMS.

Vitex agnus-castus (chaste tree or chasteberry). We met the herbal medicine *Vitex* in the last chapter as a treatment for hypothalamic amenorrhea. *Vitex* is also highly effective for PMS and has performed well in large clinical trials [\[250\]](#). Most of the trials were done in Germany where *Vitex* is routinely prescribed for PMS. It relieves mood, fluid retention, and breast tenderness. We'll look at breast tenderness in more detail later in the chapter.

How it works: It inhibits the pituitary hormone prolactin, thereby enhancing ovulation and progesterone. *Vitex* also contains opiate-like constituents, which calms the nervous system [\[251\]](#).

What else you need to know: I recommend a low dose (200 mg) of standardized extract because that's the dose used in many of the clinical trials [\[252\]](#). Less concentrated formulas (dry herb, as opposed to extract) will need to be dosed much higher at doses of 1000 to 2000 mg. For best effect, please take *Vitex* as a single dose in the morning before breakfast, because that is when your pituitary is most responsive. Stop it for five days from the start of each period. For detailed instructions, please see the [Vitex section](#) in Chapter 7.

Selenium is a key nutrient for progesterone production.

How it works: Selenium is essential for the formation and integrity of the corpus luteum.

What else you need to know: Food sources of selenium include seafood, organ meats, and Brazil nuts. One serving of salmon, for example, provides 40 mcg of selenium. If you decide to supplement,

please take only 100 to 150 mcg per day to allow for some intake from food. The safe upper limit for selenium from all sources is 200 mcg per day.

Micronized progesterone or natural progesterone is something to consider after you have tried some of the other treatments.

How it works: It is the hormone progesterone, so is a type of hormone replacement. Progesterone relieves PMS because it converts to the calming neurosteroid allopregnanolone and because it assists with the healthy removal of histamine.

What else you need to know: Take during your luteal phase as a topical cream or capsule. For more information about natural progesterone and bioidentical hormones, see the Bioidentical Hormones section in Chapter 10.

Checklist for progesterone and GABA:

- Maintain healthy ovarian follicles for all of their hundred-day journey to ovulation
- Reduce stress
- Consider taking magnesium, vitamin B6, and *Vitex*



Natural treatment works best to *prevent* PMS. Please follow the guidelines during *all* the days of your cycle—not just when you're premenstrual.

Stabilize and Metabolize Estrogen

As we saw earlier in the chapter, estrogen is a beneficial and charismatic friend, but you do need to rein her in a little. By keeping estrogen in check, you will prevent symptoms of *estrogen excess* such as premenstrual irritability and breast tenderness. You will also prevent the depression that can occur when estrogen crashes from high to low.

Diet and Lifestyle to Metabolize Estrogen

Reduce alcohol

Reduce alcohol to improve estrogen metabolism or detoxification. Remember, just two drinks per day can *double* your exposure to estrogen [253].

Maintain healthy gut bacteria

Healthy gut bacteria escort estrogen safely out of your body. Unhealthy gut bacteria do the opposite. They impair estrogen metabolism and cause estrogen to be reabsorbed into your body. One of the best ways to maintain a healthy microbiome is to avoid as much as possible drugs such as antibiotics that damage gut bacteria.

Maintain a healthy body weight

Maintain a healthy body weight, because your body fat makes a type of estrogen called estrone.

Avoid endocrine disrupting chemicals

Endocrine disrupting chemicals such as plastics and pesticides impair your ability to metabolize estrogen. They can also hyperstimulate your estrogen receptors. See the [Environmental Toxins](#) section in Chapter 11.

Reduce inflammatory foods

By reducing inflammatory foods such as sugar, wheat, and cow's milk, you support the healthy detoxification of estrogen. Reducing inflammation also reduces histamine, which in turn, reduces estrogen excess, thus relieving PMS symptoms.

Eat phytoestrogens

Phytoestrogens are natural estrogen-like substances from legumes, flaxseed, grains, and vegetables. They're beneficial for PMS because they weakly bind to your estrogen receptors and buffer you from the ups and downs of your stronger estrogen estradiol.



Phytoestrogens reduce estrogen because they block estrogen receptors and speed up estrogen metabolism [254].

Supplements and Herbal Medicines to Stabilize and Metabolize Estrogen

Iodine is helpful for PMS and especially for breast pain, which we'll discuss below.

How it works: Iodine stabilizes and down-regulates your estrogen receptors.

What else you need to know: Please be careful with iodine if you have thyroid disease. See the [Iodine](#) section in Chapter 6.

Probiotic supplements can help to promote healthy gut bacteria.

How it works: Healthy gut bacteria escort estrogen out of your body.

What else you need to know: Please see the [Digestive Health](#) section in Chapter 11 for advice about probiotics.

Calcium d-glucarate is an effective phytonutrient for PMS. The active part is the *glucarate* (not the calcium). Glucarate is normally made by your body in small amounts. It's also found in foods such as oranges and broccoli.

How it works: Glucarate assists with estrogen detoxification in two ways. First, it binds to estrogen in the liver and deactivates it. Second, it inhibits *beta-glucuronidase*, which is an enzyme made by gut bacteria that causes estrogen to be reabsorbed. Please see Chapter 5.

What else you need to know: I recommend 1000 to 1500 mg per day after food. It may also help to prevent breast cancer [\[255\]](#).

Checklist for estrogen metabolism:

- Reduce alcohol
- Maintain a healthy gut bacteria
- Consider histamine intolerance
- Consider taking calcium-d-glucarate and low-dose iodine

Reduce Inflammation

As we saw earlier in the chapter, *chronic inflammation distorts hormonal communication*. By interfering with hormone production and hormone receptors, inflammation is a major cause of PMS.

How can you reduce inflammation?

Diet and Lifestyle to Reduce Inflammation

Reduce inflammatory foods

Removing dairy from your diet can dramatically improve PMS as we saw with [Nina](#) in Chapter 6. Other potentially PMS-causing food sensitivities include wheat, sugar, vegetable oil and high histamine foods (discussed above).



Food sensitivities can cause PMS.

Supplements and Herbal Medicines to Reduce Inflammation

Magnesium plus **vitamin B6** is my front-line treatment for PMS. Both nutrients have many beneficial effects including the reduction of inflammation.

Zinc is one of the strongest anti-inflammatory supplements and did well in a recent clinical trial for PMS [\[256\]](#).

How it works: It reduces inflammation and histamine, and it *increases* progesterone and GABA. If you're deficient in zinc, you're more likely to suffer PMS [\[257\]](#).

What else you need to know: I recommend 20 to 50 mg per day to be taken *directly* after dinner (because dinner is usually the biggest meal). Please do not take zinc on an empty stomach or it will cause nausea.

Advanced Treatment of PMS

So far, we've discussed a general PMS treatment plan which should be effective for most premenstrual symptoms including those discussed in this section.

As a review, the most effective treatments for PMS are:

- Avoid inflammatory or histamine foods (usually dairy)

- Magnesium
- Vitamin B6
- Zinc

You could see results within the very first month of treatment, but it might take a little longer. Allow at least three months before you try something different.

Here are some additional treatment ideas to try *together with* magnesium and vitamin B6.

PMS with Depression and Anxiety

Mood symptoms are common with PMS. If they're severe enough, they can qualify you for the medical diagnosis of *premenstrual dysphoric disorder* or PMDD, which affects about one in twenty women. The conventional treatment for PMDD is an antidepressant.

Premenstrual mood symptoms should improve with the treatments offered earlier in the chapter, particularly **magnesium, vitamin B6, and Vitex**. All of those supplements can be used safely in combination with a conventional antidepressant.



Vitex outperforms antidepressants for premenstrual dysphoric disorder (PMDD) [\[258\]](#).

You can also consider one of the following treatments.

SAM-e (S-adenosylmethionine) is a strong mood enhancer. It works quickly over just a few days so that you can use it in the short-term, on an as-needed basis.

How it works: SAME is a derivative of the amino acid methionine. It occurs naturally in your body and has many different functions, including the manufacture of serotonin and dopamine. It also reduces histamine.

What else you need to know: I recommend 200 mg per day. Do not combine with other antidepressants except under medical advice.

St. John's wort (*Hypericum perforatum*) is an herbal medicine with a long tradition of use for depression and anxiety. In recent years, it has

undergone several clinical trials for PMS. In one study, a group of 35 PMS-sufferers took St. John's wort for two cycles and reported a significant reduction in all emotional and physical symptoms including anxiety [259].

How it works: St. John's wort boosts serotonin, dopamine, and GABA. It also reduces inflammation. Scientists are still working to discover the full explanation for St. John's wort benefits.

What else you need to know: I recommend a standardized dose of 300 mg twice daily. For best effect, take it every day for at least two months. Do not combine with other antidepressants except under medical advice. Do not combine with the birth control pill because it can reduce the pill's efficacy as contraception [260].

***Rhodiola rosea*.** We met the herbal medicine *Rhodiola* in Chapter 6 as a treatment for regulating the stress response.

How it works: *Rhodiola* regulates the stress response or HPA (adrenal) axis. It also reduces anxiety.

What else you need to know: I recommend 150-300 mg per day (of a standardized preparation with 2% of the active constituent rosavin). For best results, please take *Rhodiola* twice daily for at least three months.

PMS with Breast Pain

Cyclic breast pain (also called *cyclic mastalgia* or *fibrocystic breast pain*) is common with PMS. Symptoms include breast enlargement, pain, lumpiness, cysts, warmth, nipple soreness, and sometimes nipple discharge. Fibrocystic lumpiness of the breasts can be frightening, but it does not directly lead to breast cancer. The biggest concern is that it can mask the presence of other types of lumps, so it should be assessed by your doctor.

Iodine is the best treatment for breast pain.

How it works: As we saw in the iodine section in Chapter 6, iodine stabilizes and down-regulates estrogen receptors. Breast tissue has a lot of estrogen receptors, so breasts need a lot of iodine. Iodine supplementation significantly reduces fibrocystic breast changes [261] and the risk of breast cancer [262]. It also has a nice diuretic effect and so can relieve premenstrual fluid retention.

What else you need to know: The best type of iodine for breasts is molecular iodine or I₂. Compared to iodide, molecular iodine is absorbed

more *slowly* into the thyroid and more *quickly* into the breasts [\[263\]](#). That makes molecular iodine safer for thyroid and better for breast pain. That said, any type of iodine can be harmful to your thyroid, so please do not exceed 500 mcg (0.5 mg) except under professional advice. Too much iodine can worsen acne.



June: Iodine for breast pain

June told me that when she was coming up to her period her breasts were so painful, it hurt to walk downstairs. Her breasts were also lumpy which her doctor said was benign breast disease and told her not to worry.

June wasn't *worried*, but she was in pain. She needed help.

"Let's check your thyroid," I said. "So that we can decide if it's safe for you to take iodine."

June had a normal thyroid function test (TSH) and was negative for *thyroid antibodies*, which to me, is the single most important test before giving iodine. If she had tested positive for thyroid antibodies, then I would not give more than about 300 mcg of iodine.

I didn't test June for iodine because as we saw in Chapter 6, iodine is not easy to test. For me, as a clinician, the symptom of breast pain is enough to demonstrate iodine deficiency.

I asked June to take one tablet per day of the Violet brand of iodine which provides 3000 mcg (3 mg) of molecular iodine. She also took magnesium plus vitamin B6, which I recommend for almost every PMS patient.

Three months later, June had almost no breast pain.

I then asked June to *reduce* her iodine to one tablet every second day, because I expected she had replenished her body's iodine, and so would need less over time. Eventually, we dropped her to a maintenance dose of one tablet per week, which equates to 428 mcg per day.

Vitex is another reliable treatment for premenstrual breast pain. It can reduce lumps and pain within just two cycles [\[264\]](#). For dosing instructions, please refer to the *Vitex* section earlier in the chapter.

Vitamin E can relieve breast pain. In a 2009 double-blind clinical trial of 150 women, Vitamin E supplements (200 IU) eliminated breast pain in the majority (70 percent) of participants after two months [\[265\]](#).

PMS with Acne

Both estrogen and progesterone are generally good for skin. That's why you have clearer skin during the middle of your cycle when those hormones are high. You may then notice more acne during your premenstrual time when those hormones drop. You can *somewhat* improve acne by supporting progesterone, and by stabilizing estrogen with the treatments discussed in this chapter.

I say "somewhat" because acne is almost never about estrogen or progesterone. Instead, acne is almost always about other underlying issues such as insulin resistance and inflammation. The *best* treatments are those that address those issues, and that usually means removing both dairy and sugar from your diet, and taking zinc and an acne supplement such as those discussed in the [Acne Treatment](#) section in Chapter 7.

PMS with Migraines or Headaches

Migraines are triggered by a *drop in estrogen* [\[266\]](#), which is why the premenstrual phase is a dangerous time for migraines. Seventy percent of female migraine sufferers report a worsening of migraines just before or during her period. Melatonin insufficiency during menstruation may also play a role [\[267\]](#).

Conventional treatment is hormonal birth control, but it's not effective because most types of hormonal birth control make migraines worse. Also, hormonal birth control carries a *higher stroke risk* for migraine-sufferers than it does for other women [\[268\]](#).

Avoid wheat because it's a common migraine trigger. One study found that avoiding wheat eliminated migraines in 89 percent of patients [\[269\]](#).

Magnesium has long been a favorite for migraine prevention, which makes sense since fifty percent of migraine sufferers are deficient in the mineral. The prominent neurologist Dr. Alexander Mauskop from the New York Headache Center recommends *all migraine patients be treated with*

magnesium [\[270\]](#). Magnesium recently did well in a recent meta-analysis study for migraines [\[271\]](#).

How it works: It calms your nervous system, reduces inflammation, and stabilizes serotonin receptors. Magnesium also prevents the release of *substance-P*, which is a pain-promoting neurotransmitter involved in migraines.

What else you need to know: I recommend 300 mg of magnesium glycinate. You can take an extra dose of magnesium if you feel a migraine coming on. It works well in combination with 100 mg of vitamin B6.

Melatonin supplements reduce the frequency of menstrual migraines. It's outperformed conventional migraine medication in at least one clinical trial [\[272\]](#).

How it works: It reduces inflammation, and stabilizes the neurotransmitters serotonin and GABA.

What else you need to know: It works as prevention so it should be taken every night throughout the luteal phase. I recommend 0.5 to 3 mg at bedtime.

Vitamin B2 (riboflavin) reduces the frequency of migraines by 50 percent [\[273\]](#).

How it works: It normalizes the production of serotonin and improves the function of a gene called MTHFR that has been linked to migraines.

What else you need to know: I recommend 200 mg twice daily.



MTHFR

MTHFR (methylenetetrahydrofolate reductase) is an enzyme that transforms folate (folic acid) to its active form. About one in three people have a variant of the gene that makes the enzyme. The MTHFR gene mutation can be assessed with a simple blood test. If you have the variant gene, then you may need a higher dose of B vitamins.

Micronized progesterone or natural progesterone is highly effective for premenstrual migraines. I said earlier that I recommend trying other treatments before trying progesterone. Premenstrual migraines are the

exception. When a patient comes to me for help with migraines, I often recommend progesterone on the first visit.

How it works: Progesterone calms your nervous system and brain.

What else you need to know: I recommend a cream or capsule. Take at bedtime throughout your migraine “danger window” (usually from five days before your period until two days into your period). If you feel a migraine coming on, take a second daytime dose. See the Natural Progesterone section in Chapter 10. And just a reminder: There is *no* progesterone in hormonal birth control.

Postmenstrual or end-menstrual migraines

Researchers have recently discovered that *end-menstrual* migraines are not triggered by hormones as are premenstrual migraines. Instead, end-menstrual migraines are triggered by a brief anemia due to menstrual blood loss [\[274\]](#). The treatment is to take iron.

PMS with Fatigue

To treat premenstrual fatigue, you must first figure out *why* it’s happening.

Inflammatory fatigue

A common reason for premenstrual fatigue is the inflammation as progesterone drops away (remember, progesterone is anti-inflammatory). With this type of fatigue, you feel a bit like you have the flu, with achy muscles and a sore throat. Best treatments are anti-inflammatory nutrients such as magnesium, vitamin B6, and zinc.

HPA (adrenal) axis fatigue

Another reason for premenstrual fatigue is a problem with your stress response system or HPA (adrenal) axis. Losing progesterone at the end of your cycle can destabilize your HPA axis and worsen “adrenal fatigue.” With this type of fatigue, you feel agitated or stressed before your period. Best treatments are magnesium plus vitamin B6 plus an *adaptogen* herb such as *Rhodiola* or ashwagandha.

Sleep problems

Yet another reason for premenstrual fatigue is the insomnia you might experience as your estrogen and progesterone drop away. Both hormones have direct sleep-enhancing effects [\[275\]](#) and so losing them can disrupt sleep.

Special Topic: The Sleep-Enhancing Effect of Progesterone

The sleep-enhancing effect of progesterone is so pronounced that it can be detected on EEG or brainwave studies. For example, in the days immediately after ovulation (when progesterone is highest), women exhibit more sleep spindles, which are brainwaves that indicate the onset of deep sleep [\[276\]](#). Conversely, women on the Pill (who have no progesterone) exhibit fewer sleep spindles and fewer restorative sleep cycles [\[277\]](#).

The best treatment for premenstrual insomnia is magnesium, and other progesterone-enhancing treatments discussed earlier in the chapter. Micronized progesterone capsules can also be extremely helpful [\[278\]](#).

Iron deficiency

A final consideration for premenstrual fatigue is iron. Iron deficiency is common in women with PMS [\[279\]](#). You are particularly at risk of iron deficiency if you suffer heavy periods.

If you suspect iron deficiency, look for symptoms such as breathlessness and easy bruising. Ask your doctor to test your *serum ferritin*.



ferritin

Serum ferritin is the blood test for stored iron.

Your doctor needs to test your *actual* iron or ferritin levels. It's not enough to just order a blood count, and then say your hemoglobin is okay,

so your iron must be okay.



blood count

Blood count is a blood test to determine the number of blood cells and hemoglobin.



hemoglobin

Hemoglobin is the iron-containing protein found in red blood cells.

Your serum ferritin should be between 50 and 200 ng/mL.

Iron is a key energy nutrient.

How it works: It transports oxygen in your blood and supports the production of thyroid hormone.

What else you need to know: If you are deficient, take 15 to 50 mg of iron bisglycinate (a gentle and highly absorbable form of iron) directly after food. Food sources of iron include red meat, eggs, lentils, and leafy green vegetables.

PMS with Sugar Cravings

Premenstrual cravings are so common they've become a kind of joke in popular culture. And yet, like all things premenstrual, you do not have to put up with them.

First of all, it's *normal* to be hungrier before your period. It happens because both estrogen and serotonin drop away and they were your natural appetite suppressants earlier in your cycle. So, you're left with relatively more progesterone, which is an appetite stimulant. Progesterone's appetite-enhancing effect is nothing to worry about because progesterone also increases your metabolic rate, so you burn more calories.

If you're hungrier during your premenstrual time, then please *eat more*. It's fine and normal. Have that second serving of your meal if you need it.

Snack on satisfying high-calorie foods like nuts or boiled eggs.

But please avoid sugar because sugar is an inflammatory food that will only make your PMS worse.

Here are a few tricks to get rid of the cravings.

Get enough sleep

Sleep normalizes appetite, and so adequate sleep is one of the best ways to prevent premenstrual sugar cravings.

Eat protein

Protein promotes satiety. In other words, protein makes you feel full, which will make you far less likely to crave sugar.

Quit sugar

As we saw in the [Sugar section](#) of Chapter 7, sugar can be addictive. Yes, you might crave it more intensely during PMS, but if you crave it all the time, then your sugar cravings are only a *premenstrual magnification* of a bigger problem.

It's time to break your sugar addiction. I assure you: You cannot just "cut back." Quitting sugar is the only way to permanently escape your cravings.

The best supplement for sugar cravings is the core PMS treatment of magnesium plus vitamin B6. Together, they calm your nervous system, reduce inflammation, and improve insulin resistance.

Other helpful supplements include SAME, and St. John's wort.



If you crave chocolate during PMS, it might just be your body trying to get more magnesium. One bar (100 g) of dark chocolate delivers about 200 mg of magnesium. Supplementing magnesium is an easy way to relieve chocolate cravings.

Occasional PMS Is a Useful Part of Your Monthly Report Card

Your PMS should improve rapidly, and you can expect months of little or no symptoms. Every once in a while, your PMS will return. It's not because

the treatments have stopped working. It's because something has changed with *you*.

For example, you may have encountered some work stress. Or some overseas travel. Perhaps you suffered an infection and had to take antibiotics. Or perhaps desserts crept back into your diet.

Any and all of those things can bring back your old PMS.

Remember, your period is your monthly report card. Your premenstrual time is an exquisitely sensitive part of that report card. It reports on things that have just happened that month. Maybe those 50 hours of work per week were just too much for you. Maybe you need to quit sugar again.

You can thank your PMS for telling you so.

Chapter 9



Easy Flow: No More Pain and Suffering

We've talked about irregular periods, and also the difficult premenstrual build-up to periods. We now come to the all-important bleed itself.

Let's review what is normal. Your menstrual fluid should be mostly liquid, with no large clots. It should be bright red. Your period should not be painful.

You should lose anywhere from 25 to 80 milliliters (mL) over all the days of your period. That allows for a significant amount of variation. For example, it's normal to have a scanty little bleed that lasts only two days. It's normal to have a longer, heavier bleed that goes on for seven days. The average blood loss is 50 mL, which equates to ten fully soaked regular tampons or five fully soaked super-tampons over all the days of your period. Remember, one soaked regular pad or tampon holds 5 mL. A half-soaked tampon holds 2.5 mL, and a fully soaked super-tampon holds 10 mL.

Heavy Menstrual Bleeding or Heavy Periods

Heavy menstrual bleeding affects about 25 percent of women. The medical term is menorrhagia (meaning "menstrual burst") and is defined as blood loss of greater than 80 mL, or lasting longer than seven days. To visualize this, 80 mL equates to 16 fully soaked regular tampons, or eight fully soaked super-tampons over all the days of your period.

It's possible you lose far, far more than 80 mL. That kind of scary period can happen during perimenopause when you may lose more than 500 mL (two cups) in a single period. That's called *menstrual flooding*, which we'll discuss in Chapter 10. Please read this section before going to Chapter 10.

Prolonged bleeding

If you flow for more than seven days, you almost certainly had an *anovulatory cycle*. That can occur with PCOS (Chapter 7) or perimenopause (Chapter 10). If you have PCOS, your strategy is to figure out your type of PCOS and treat it. See Chapter 7. You may also want to consider micronized or natural progesterone

Get a Diagnosis

If you have not already done so, please see your doctor about your heavy periods. She will likely do a pelvic exam, as well as order blood tests and a pelvic ultrasound. She will probably then say that your heavy periods are the result of a *hormone imbalance*, by which she means too much estrogen and not enough progesterone.



Progesterone lightens periods.

Your doctor could also discover a *medical reason* for heavy menstrual bleeding. The two most common are coagulation disorders and thyroid disease. Let's look at each.

Coagulation disorders

A coagulation disorder is an impairment of your body's ability to clot blood properly. It can happen for different reasons, the most common being that you have a genetic variant of one of the many clotting factors. You've probably heard of the coagulation disorder hemophilia, but there are several others including the common *von Willebrand disease*.

If you've suffered heavy periods all your life, please ask your doctor to test you for von Willebrand disease. The condition accounts for at least 20 percent of all cases of heavy menstrual bleeding [\[280\]](#), which is sometimes the only symptom. If your gynecologist dismisses coagulation disorder as a possibility, then it's because she does not understand how likely it is [\[281\]](#).

Your doctor can rule out a coagulation disorder with a simple screening blood test. If you test positive for a coagulation disorder, then she will refer you to a hematologist or blood specialist.

Thyroid disease

Underactive thyroid or hypothyroidism is a common cause of heavy menstrual bleeding and has been recognized as such since 1840. Oddly, your doctor may not consider it. According to one senior doctor writing in the British Medical Journal:

“..Hypothyroidism may be greatly underdiagnosed as a cause of menorrhagia...and all women with unexplained menorrhagia should be tested for thyroid” [\[282\]](#).

Dr. Andrew Weeks

How does hypothyroidism cause heavy periods? For one thing, it deprives your ovarian follicles of the thyroid hormone they need to ovulate and make progesterone. And remember, progesterone is your “period-lightening” hormone.

Hypothyroidism also decreases coagulation factors [\[283\]](#) which impair your ability to clot blood. And finally, hypothyroidism increases your exposure to estrogen by slowing estrogen metabolism and reducing an “estrogen-binding protein” called sex hormone binding globulin (SHBG).

If you have thyroid disease, then thyroid hormone is the best treatment for your heavy menstrual bleeding. That may be true *even if your doctor says your thyroid is fine*. Please see the Thyroid Disease section in Chapter 11.

Other medical reasons for heavy periods

Other medical reasons for heavy menstrual bleeding include liver disease, pelvic infection, miscarriage, uterine polyps, fibroids, adenomyosis, and endometriosis. Of these possibilities, adenomyosis and endometriosis are the most common. We’ll discuss those two important conditions later in this chapter.

When are you most at risk?

You can suffer heavy menstrual bleeding at any age, but you’re most at risk when you’re a teenager and again when you’re in your 40s (perimenopause). This section is about heavy periods in your teens, 20s, and 30s. If you’re in your 40s, please read this section first and then the Heavy Periods section in Chapter 10.

The heavy periods of teenagers

Why might you suffer heavy periods as a teen? Two reasons.

1. Your estrogen receptors are still getting used to estrogen, so they react more strongly. That estrogen sensitivity will persist for a year or

two while you form your “hormonal river system”—described in Chapter 1.

2. You don't yet make enough progesterone because you don't yet ovulate regularly.

With time, your estrogen receptors will adjust to estrogen and become less sensitive to it. You will also start to ovulate and make progesterone—so your periods should lighten.

If you're a teenager, your heavy periods are probably a temporary thing. You don't need the pill. Instead, you can use natural treatments such as iron, turmeric, and a dairy-free diet (described below). While you're waiting a month or two for the natural treatments to take effect, you can manage the flow with ibuprofen (see the next paragraph).

Conventional Treatment of Heavy Periods

Ibuprofen

The conventional anti-inflammatory medication ibuprofen (Advil or Nurofen) reduces menstrual flow **by half** ^[284]. It works by lowering the prostaglandins that contribute to heavy flow. Take 200 mg every six hours during your first one or two days of bleeding.

Ibuprofen is a simple and practical solution for heavy bleeding. Yes, it's a pharmaceutical drug, but you only take it for a couple of days per month. In my view, it's a far better option than hormonal birth control.

Hormonal birth control

Hormonal birth control is the standard prescription for heavy periods, but for reasons I explained in Chapter 2, it's not a great solution.

Mirena IUD

Mirena is a better option than other types of hormonal birth control. It delivers a smaller dose of progestin than the pill and so does not completely suppress ovulation. Plus Mirena reduces flow by *90 percent* which gives great relief for heavy periods. Unfortunately, once you remove Mirena, your heavy bleeding will return.

Of course, I hope the natural treatments will work for you, so you won't need a hormonal IUD. If you're stuck and *have to* choose a conventional treatment such as the pill or Mirena, I recommend Mirena.

Diet and Lifestyle to Prevent Heavy Periods

Natural treatments work to *prevent* heavy periods. They cannot stop a heavy period once it's underway.

Avoid cow's dairy

My clinical observation is that *dairy makes periods heavier*. There is also new research to suggest that dairy may alter hormones and impair ovulation [\[285\]](#).

Avoiding dairy is a safe and simple solution to try for a few months. And remember, you can still have goat and sheep milk products. Please see the Dairy section in Chapter 6.



Humans have no nutritional requirement for animal milk [\[286\]](#).

A dairy-free diet can work particularly well for the heavy periods of teenagers.

Keep insulin low

Insulin is a growth hormone and thickens your uterine lining. And as we saw in Chapter 7, too much insulin can impair ovulation and cause progesterone deficiency. You're more at risk for heavy periods if you have insulin resistance and insulin-resistant PCOS. For treatment ideas, please see the insulin resistance sections in Chapters 7 and 11.

Exercise

Exercise improves insulin sensitivity, reduces inflammation, and promotes the healthy removal of estrogen through perspiration.

Maintain healthy gut bacteria

Healthy gut bacteria escort estrogen safely out of your body. Unhealthy gut bacteria do the opposite. They impair estrogen metabolism and cause estrogen to be reabsorbed into your body. One of the best ways to maintain a healthy microbiome is to avoid as much as possible drugs such as antibiotics that damage gut bacteria.

Eat phytoestrogens

Phytoestrogens are found in plant food such as nuts, legumes, and flax seeds. They reduce your exposure to estrogen by blocking estrogen receptors and promoting the healthy metabolism of estrogen.

Supplements and Herbal Medicines to Prevent Heavy Periods

Iron is a critical nutrient for heavy periods.

How it works: Iron corrects the iron deficiency caused by your heavy periods, but it can also *lighten* your period. That's because iron deficiency is both a *cause* and *effect* of heavy periods [\[287\]](#). We don't yet understand exactly *how* iron lightens periods, but I've found it to be true with my patients.

What else you need to know: Ask your doctor to test “serum ferritin” (see the [Iron Testing](#) section in Chapter 8). If you're deficient, then take 15 to 50 mg of a gentle and absorbable form of iron called iron bisglycinate. The best food sources of iron are animal products including red meat and eggs.



Can't get your iron up? It could be because you're consuming too much dairy. Dairy inhibits the absorption of iron.

Turmeric is the yellow spice commonly used in Indian curries. It contains the active ingredient *curcumin*. Both turmeric and curcumin are available in the form of a concentrated capsule.

How it works: It reduces inflammation and prostaglandins, thereby reducing menstrual flow in a way similar to ibuprofen. Turmeric also lowers estrogen by blocking an enzyme called aromatase.

What else you need to know: Unlike ibuprofen (which you take only during your period), you take turmeric every day of your cycle and then increase it during your period. It can also relieve period pain.

Turmeric is generally safe and non-toxic even at high dose. The only precaution is that it can interact with anticoagulant medication.

Turmeric or curcumin capsules are an excellent treatment choice for the heavy periods of teenagers. Turmeric is better absorbed when taken

directly after a meal.

Other supplements for heavy periods include DIM (diindolylmethane), calcium-d-glucarate, and micronized progesterone. I'll discuss those treatments in Chapter 10.

Checklist for heavy periods

- Rule out a medical cause such as thyroid disease
- Consider taking ibuprofen on your heavy days
- Avoid cow's dairy
- Consider taking iron and turmeric
- See the heavy periods section in Chapter 10

Light Periods

You can lose as little as 25 mL of menstrual fluid, and that is still normal. 25 mL equates to 5 fully soaked regular tampons, spread over all the days of your period.

If you see less than 25 mL of menstrual fluid, then ask yourself:

“Is it a true period or is it an anovulatory bleed?”

Remember, a true period is one that follows a follicular phase, ovulation, and a luteal phase. An anovulatory bleed is one that follows a cycle in which *you did not ovulate*. It's not a real period and is better described as *breakthrough bleeding*.

If you're having anovulatory cycles, then your best strategy is to *find a way ovulate*. Please see Chapter 7.

If you're certain you *do* ovulate, then your next question is:

“Is it a true period or is it another type of bleeding like mid-cycle spotting?”

That's what happened to my patient Sam.



Sam: A short light cycle

Sam was pretty worried about what she described as very light periods coming every two to three weeks.

“Do you know if you ovulate?” I asked.

With a two-week cycle, Sam was either 1) not ovulating, or 2) seeing mid-cycle spotting and mistaking it for a period.

Sam had no idea if or when she ovulated, so I asked her to track her fertile mucus and temperatures for a couple of months. See the [Physical Signs of Ovulation](#) section in Chapter 3.

We discovered that happily, Sam was ovulating every cycle. When she knew what to look for, Sam noticed fertile mucus just before her first “period” which was really just half a day of light ovulation bleeding.

After that, her temperatures went up for an eleven-day luteal phase and then dropped for her real period of two more days of light bleeding.

“The first bleed is ovulation,” I said. “The second bleed after your temperature drop is your period. Count the first day of *that* bleed as your ‘day 1.’”

Counting properly from “day 1” to “day 1” Sam had about a 37-day cycle. Yes, her period was light, but that was because she was vegetarian and ate a lot of phytoestrogens in beans and grains.

“The phytoestrogens in your diet are blocking estrogen and making your period lighter,” I explained. “I’m not worried about the light period, but I’m concerned your cycle is a little long at 37 days. It would be nice to get you to ovulate a little sooner. One way is to cut back on the phytoestrogens a bit, and the other is to look at supplementing zinc and iodine—two nutrients that are essential for ovulation and are often deficient with a vegetarian diet.”

I ordered a blood test for zinc, which came back low, so I asked her to supplement 30 mg zinc and 200 mcg iodine.

Sam also diversified her protein to include rice protein, which contains fewer phytoestrogens.

A few months later, Sam’s cycle shortened to 32 days, and she stopped seeing the mid-cycle spotting.

A light period is a sign of *lower than average* estrogen, but as long as you ovulate, you probably do not need treatment. *You have enough estrogen*, or you could not reach ovulation. You just don’t have as much estrogen as other women. In other words, your estrogen is *relatively* low.

It's not truly low—like it would be if you did not ovulate, or if you were in menopause.

The relatively low estrogen of ovulatory cycles generally does not require treatment.

Checklist for light periods

- Are they real periods or anovulatory cycles?
- If it's an anovulatory cycle, then find a way to ovulate

Uterine Fibroids

If your doctor ordered a pelvic ultrasound to investigate heavy menstrual bleeding or some other symptom, she might have discovered a fibroid or fibroids. What does that mean?

A uterine fibroid (also called leiomyoma or myoma) is a benign growth of your uterine muscle. Fibroids are common after age 35, and most older women have at least one or two small fibroids. In most cases, they don't cause symptoms and may simply be an *incidental finding* that does not require treatment.

Fibroids and heavy bleeding often occur together because both conditions are caused by estrogen excess. But fibroids themselves are rarely the *cause* of heavy bleeding because most fibroids are located inside the muscle or on the outside of the uterus where they do not affect flow. Only ten percent of fibroids grow into the uterine cavity where they can cause heavy bleeding [\[288\]](#).

Fibroids can, however, cause other symptoms, such as pelvic discomfort and frequent urination because of your uterus pressing on your bladder.

Risk factors for uterine fibroids

Anything that increases your lifetime exposure to estrogen can potentially increase your risk of fibroids. For example, early use of an estrogen pill may increase the risk of fibroids [\[289\]](#). As do alcohol and obesity because they increase estrogen. Finally, endocrine disrupting chemicals have been linked with fibroids [\[290\]](#).

Fibroids grow slowly over many years and tend to run in families which suggests a genetic component [\[291\]](#).



Fibroids are easier to prevent than they are to treat.

Conventional Treatment of Uterine Fibroids

Unless it's larger than 10 cm or growing inside your uterus, a fibroid usually does not require medical treatment. The standard medical approach is to watch and wait. Fibroids will naturally shrink by about 50 percent after menopause.

If your fibroids do require treatment, then you will be offered surgery such as hysterectomy (Chapter 10) or myomectomy.

Myomectomy

Myomectomy is the surgical removal of the fibroid but leaving the uterus.

Myomectomy carries a risk of bleeding, which is why some doctors are reluctant to attempt it. The bleeding risk depends on the size and location of your fibroid. Fibroids outside of the uterus are easier to remove.

Uterine artery embolization

Uterine artery embolization is a nonsurgical treatment option for fibroids. It's done under local anesthetic in an outpatient setting. Guided by an X-ray image, a radiologist inserts a catheter into your leg and injects small beads or particles into your uterine artery to block the fibroid's blood supply. With time, the fibroid will then shrink.

Uterine artery embolization carries a small risk of infection and pain. It is a safer procedure than hysterectomy or myomectomy.

Diet and Lifestyle for Uterine Fibroids

Natural treatment *cannot* substantially shrink fibroids, but it can prevent further growth. That may be enough to get you through to menopause when your fibroids will naturally shrink anyway.

Reduce alcohol

Alcohol impairs your liver's ability to metabolize or detoxify estrogen. There's a strong association between alcohol consumption and fibroids [\[292\]](#).

Maintain a healthy gut bacteria

As discussed in the heavy period section, healthy gut bacteria escort estrogen safely out of your body.

Maintain a healthy body weight

Maintain a healthy body weight, because your body fat makes a type of estrogen called estrone.

Avoid endocrine disrupting chemicals

Endocrine disrupting chemicals such as plastics and pesticides impair your ability to metabolize estrogen. They can also hyperstimulate your estrogen receptors. See the [Environmental Toxins](#) section in Chapter 11.

Supplements and Herbal Medicines for Uterine Fibroids

Iodine may help to slow the growth of fibroids.

How it works: It down-regulates estrogen receptors, thereby reducing estrogen stimulation.

What else you need to know: Iodine can harm your thyroid gland. Do not exceed 500 mcg (0.5 mg) daily except under professional advice. See the [Iodine](#) section in Chapter 6.

Calcium d-glucarate assists with the healthy metabolism or detoxification of estrogen.

How it works: Glucarate assists with estrogen detoxification in two ways. First, it binds to estrogen in the liver and deactivates it. Second, it inhibits *beta-glucuronidase*, which is an enzyme made by gut bacteria that causes estrogen to be reabsorbed.

What else you need to know: I recommend 1000 to 1500 mg per day after food. It may also help to prevent breast cancer [\[293\]](#).

Cinnamon and hoelen combination is a traditional Chinese herbal medicine that contains *Peonia lactiflora*, *Cinnamomum cassia*, and other herbs. Regular use has been shown to prevent fibroid growth [\[294\]](#).

I like Cinnamon and hoelen combination, but I prefer to start with less expensive lifestyle changes, low-dose iodine, and calcium-d-glucarate.

Checklist for fibroids

- Fibroids are easier to prevent than they are to treat
- Keep estrogen low by reducing alcohol and maintaining healthy gut bacteria
- Consider taking calcium d-glucarate and low-dose iodine

Adenomyosis

Adenomyosis is a different kind of abnormal growth in your uterine wall. It's similar to uterine fibroids, and until recently, was often mistaken for fibroids.

According to Professor Edward Lyons of the University of Manitoba, adenomyosis is under-diagnosed. He says that the majority of women with a lumpy or enlarged uterus have adenomyosis—not fibroids [\[295\]](#).

Please seek an accurate diagnosis. The treatment of adenomyosis is different from the treatment of fibroids.

With adenomyosis, the uterine growths are not muscle like they are with fibroids. Instead, they are bits of uterine lining that have grown into your uterine muscle. It is similar to another condition called endometriosis, which we'll come to next.

Symptoms of adenomyosis include abdominal distension, pelvic pain, and very heavy periods. Adenomyosis is more common in women over 35, but it can occur at any age. Diagnosis is by pelvic ultrasound or MRI.

Conventional Treatment of Adenomyosis

Conventional treatment is hysterectomy, oral contraceptives, or the Mirena IUD.

The hormonal IUD reduces blood flow by 90 percent, which can be pretty helpful for a condition like adenomyosis. I sometimes recommend my adenomyosis patients to go ahead with the IUD.

Myomectomy or uterine artery embolization can be attempted for adenomyosis but carries a higher risk of complications compared with uterine fibroids. Many women who undergo embolization ultimately end up requiring a hysterectomy anyway [\[296\]](#).

Like fibroids, adenomyosis will shrink somewhat in menopause.

Diet and Lifestyle for Adenomyosis

The natural approach to adenomyosis is a combination of the treatment of *endometriosis* (discussed below) and the treatment of the *very heavy periods of perimenopause* (discussed in Chapter 10). Please read those sections for additional treatment ideas.

Natural treatment can help the condition, but it cannot cure it.

Avoid cow's dairy

Dairy makes periods heavier and may also worsen the underlying inflammation or immune dysfunction that drives both adenomyosis and endometriosis.

Consider avoiding gluten

Like dairy, gluten worsens the immune dysfunction that lies at the heart of both adenomyosis and endometriosis.

Reduce alcohol

Alcohol impairs your liver's ability to metabolize or detoxify estrogen.

Maintain a healthy gut bacteria

As discussed earlier in the chapter, healthy gut bacteria escort estrogen safely out of your body.

Supplements and Herbal Medicines for Adenomyosis

Turmeric lightens periods and reduces estrogen, pain, and inflammation. Please see the Heavy Period section above for dosing instructions.

Zinc is helpful for adenomyosis and endometriosis and period pain (discussed below).

How it works: It reduces both pain and inflammation [\[297\]](#). I recommend 20 to 50 mg per day taken *directly* after dinner. Do not take zinc on an empty stomach or it will cause nausea.

Cinnamon and hoelen combination is helpful for adenomyosis as well as fibroids (see above).

Micronized progesterone or **natural progesterone** makes periods lighter. It's as effective as a synthetic progestin, but without the side effects. Please see the Heavy Period section in the next chapter.

How it works: It thins the uterine lining and reduces inflammation.

What else you need to know: A progesterone capsule works better than a topical cream for adenomyosis. See Chapter 10.

Checklist for adenomyosis

- Avoid cow's dairy
- Consider taking turmeric, zinc, and micronized progesterone
- Look at the treatments for endometriosis and the heavy periods of perimenopause

Endometriosis

Endometriosis is a common condition that affects more than one in ten women. Its main symptom is *pain*, which can be severe. Remember from the Period Pain section in Chapter 5 that there's a big difference between *normal* period pain and the *severe* period pain of endometriosis or adenomyosis.

Normal period pain is a bit of cramping in your lower pelvis or back. It occurs just before or during your period. It improves with ibuprofen, and does not interfere with your daily activities. We'll discuss natural treatment for normal period pain later in the chapter.

Severe period pain is throbbing, burning, searing, or stabbing pain that lasts for many days and can occur between periods. It doesn't improve with ibuprofen, and can be so bad you vomit or miss work.

Endometriosis pain can occur in your uterus during your period. Or it can occur in other *places* such as your rectum, bladder, legs, or throughout your pelvis. Or it can occur at other *times* such as ovulation and during sex. With endometriosis, you could have pain *all the time*, or, oddly, you could have no pain at all.

Other symptoms of endometriosis:

- Bladder problems such as urgency, frequency, and painful voiding
- Bowel problems such as diarrhea and constipation
- Abdominal bloating
- Nausea and vomiting
- Headaches
- Low-grade fever
- Bleeding between periods

- Infertility and recurrent miscarriage

As you can see, endometriosis is not just a period problem. It is a *whole body inflammatory disease*, and your doctor may have missed it. Endometriosis typically takes up to *ten years to diagnose*.



70 percent of teens reporting chronic pelvic pain will eventually go on to be diagnosed with endometriosis [\[298\]](#).

What Is Endometriosis?

Endometriosis is a condition in which bits of tissue that are *similar to the endometrium* (uterine lining) grow in places other than inside your uterus. The bits of tissue are called *endometriosis lesions* and can occur in anywhere in the body, including the bowel and bladder. The most common sites for endometriosis are around the uterus and ovaries and on the Fallopian tubes. When endometriosis occurs on the ovaries, the growth is called an *endometrioma* or chocolate cyst.

Researchers don't yet know what causes endometriosis. The most widely accepted theory is *retrograde menstruation* which means that menstrual fluid flowed back through your Fallopian tubes and entered your pelvic cavity. This old theory is falling out of favor because retrograde menstruation occurs in most women, and yet only ten percent develop endometriosis. Instead, some researchers think that endometrial tissue is laid down before birth and lies dormant until it's activated by hormones at puberty.

Whatever the source of the endometriosis lesions, your immune system is a big part of what happens next. It produces inflammatory cytokines and autoantibodies that inflame the endometriosis lesions and promote their growth.

The growing consensus is that endometriosis is caused by *immune dysfunction* [\[299\]](#), and some researchers have gone so far as to characterize it as an autoimmune disease [\[300\]](#). Endometriosis shares many features with autoimmune diseases such as lupus and rheumatoid arthritis, including

angiogenesis, which is the ability of the lesions to establish a blood supply [\[301\]](#).



autoimmune disease

Autoimmune disease occurs when your immune system attacks your own healthy tissue. There are more than 80 types of autoimmune disease, including Hashimoto's thyroid disease and rheumatoid arthritis.

There is a strong genetic component to endometriosis. If you have a sister or mother with the disease, then you are 8 to 10 times more likely to develop it yourself [\[302\]](#).

Endometriosis has also been linked to dioxin exposure in the womb [\[303\]](#), which means you may have been predisposed to the disease before you were even born. On the one hand, that's frustrating because the cause was out of your control. On the other hand, it means it was *not* something you did wrong or ate wrong. Endometriosis is *not* a lifestyle disease.

Other endocrine disrupting chemicals may play a role in endometriosis [\[304\]](#). We'll talk more about environmental toxins in the [Environmental Toxins](#) section in Chapter 11.

The link with digestive problems

Endometriosis and digestive problems go hand in hand. For one thing, endometriosis lesions and adhesions can occur on the bowel and directly cause digestive problems. Up to 90 percent of women with endometriosis also experience bowel symptoms [\[305\]](#).



adhesions

Adhesions are bands of connective tissue or scar tissue that bind pelvic structures together and cause pain. They are the result of both the disease process of endometriosis and the surgery used to treat it.

So, endometriosis can cause digestive symptoms but, at the same time, digestive problems can *worsen endometriosis*. Why? Because digestive problems can affect the immune system and endometriosis is primarily a disease of *immune dysfunction*.

As we saw in Chapter 6, your digestion and your immune system are, in a sense, one continuous entity. Anything that upsets your digestion will upset your immune system and cause it to make more *inflammatory cytokines*. One example is the presence of too many of the wrong kind of bacteria in your digestion. They produce a toxin called LPS (lipopolysaccharide) which promotes both autoimmune disease [\[306\]](#) and endometriosis [\[307\]](#) [\[308\]](#).

Digestive problems can also lead to *intestinal permeability* which we first discussed in Chapter 6. It occurs when the intestinal wall becomes more permeable and permits bacterial toxins and other proteins to enter your body and activate your immune system. Intestinal permeability can worsen inflammatory disease, and I would argue it plays a role in endometriosis. We'll discuss [Intestinal Permeability](#) in more detail in Chapter 11.

Since digestion plays a role in *promoting* endometriosis, fixing digestion can go a long way to *helping* endometriosis, as we'll see.

The role of estrogen and progesterone

Endometriosis is fundamentally an *inflammatory disease*—not a hormonal condition. That said, hormones do play a role.

Estrogen strongly stimulates the growth of endometriosis lesions, which is why the current conventional approach is to shut down estrogen. Shutting down estrogen has a lot of side effects, so hopefully, that approach will change as researchers discover new anti-inflammatory and immune-modulating treatments.



Estrogen worsens endometriosis, but it does not cause endometriosis.

Both progesterone and progestins slow the growth of endometriosis lesions.

Diagnosis of Endometriosis

Currently, the only way to diagnose endometriosis is by laparoscopic (keyhole) surgery, which seems terribly outdated.

A pelvic ultrasound usually cannot detect endometriosis lesions, but it can sometimes detect endometriomas and a more severe form of endometriosis called *deep infiltrating endometriosis* [\[309\]](#).



Endometriosis cannot be ruled out by ultrasound.

The search is underway for a simple test that would use a *biomarker* found in blood, urine, menstrual blood, or the uterine lining [\[310\]](#). A biomarker is a measurable indicator such as a protein or immune component. Once developed, it will mean that endometriosis can be diagnosed by a simple blood test [\[311\]](#) [\[312\]](#).

There is currently no cure for endometriosis

Endometriosis is a serious disease. Both conventional and natural treatments can relieve symptoms, but they cannot cure the disease.

Conventional Treatment of Endometriosis

Surgery

As well as being the standard diagnostic technique for endometriosis, surgery is currently the primary conventional treatment. Surgery does not cure endometriosis, but it does relieve pain and improve fertility. Furthermore, it reduces inflammatory cytokines in the pelvis which makes endometriosis easier to treat with both conventional and natural treatments.

The procedure is laparoscopic or keyhole surgery to physically remove the endometriosis lesions. The success of the surgery depends on the skill and training of the surgeon and whether she manages to remove all of the lesions. A type of surgery called *excision surgery* is more successful in the long-term [\[313\]](#) and may come close to a cure for some women.

“Endometriosis shouldn’t be the path of 15 surgeries. It should be one surgery done right.” [\[314\]](#)

Dr. Iris Orbuch

There are downsides to surgery. The first, of course, is that it is surgery and requires general anesthetic and recovery. Another potential downside is that, like the disease itself, surgery can cause *adhesions* or scar tissue, which then cause pain. Finally, surgery does not cure endometriosis (although it can come close for some women). The rate of recurrence following surgery is 21 percent after two years and 40-50 percent after five years [\[315\]](#). Recurrence can lead to more surgeries. The medical solution is to give hormone-suppressing drugs to try to prevent that.



I do recommend surgery for some of my patients. See Hannah's story below.

Medical treatment

The drugs that suppress estrogen include the contraceptive pill, Depo-Provera, Lupron, and Danazol. They have many side effects such as depression and osteoporosis.

Another medical approach is to give a low dose progestin such as dienogest in the Visanne pill or levonorgestrel in the Mirena IUD. Low dose progestins drugs are gentler because they do not suppress ovulation or estrogen. Instead, they work by directly suppressing the growth of endometriosis lesions. I think Visanne or Mirena are *reasonable* solutions, but, in my experience, natural progesterone capsules work just as well, with fewer side effects. See Hannah's story below.

Researchers are also actively looking for **new non-hormonal treatments** for endometriosis including the following [\[316\]](#):

- Angiogenesis inhibitors (drugs that inhibit *angiogenesis* or the growth of new blood vessels)
- Anti-inflammatories (drugs that reduce inflammation)
- Immunomodulators (drugs that alter the activity of the immune system)

A new non-hormonal treatment option would indeed be a welcome development!

In the meantime, there are many *natural* anti-inflammatory and immune-modulating treatments.

Diet and Lifestyle for Endometriosis

Diet is the single most important part of natural treatment for endometriosis. It works by *reducing inflammatory cytokines* as explained in the [Anti-Inflammatory Diet](#) section in Chapter 6.

Avoid cow's dairy (A1 dairy)

My clinical observation is that stopping cow's dairy can have a profound effect on endometriosis. It's not a cure, but it could be an important part of your treatment plan. As with other conditions, you can probably still have goat and sheep milk products.

Consider avoiding gluten

You may also want to try avoiding gluten. One study found that endometriosis improves after 12 months on a gluten-free diet [\[317\]](#). As an endometriosis sufferer, you are likely to be among the one in ten who have a major issue with gluten (as discussed in Chapter 6).

Until recently, no research had yet looked at dietary interventions for endometriosis. Then in 2017, a New Zealand clinical trial found that endometriosis symptoms improve on the low-FODMAP diet typically prescribed for irritable bowel syndrome [\[318\]](#). (FODMAPs are “fermentable carbohydrates” such as those found in wheat, legumes, and some types of dairy.) Such a study is a good first step and supports the idea that fixing digestion can reduce the inflammation of endometriosis.

And just a word about the low-FODMAP diet. It can be very helpful in the short-term, but I do not recommend it in the long-term because it can rob you of valuable dietary fiber. Instead, I recommend you identify and treat a condition called small intestinal bacterial overgrowth (SIBO), which we'll discuss in the Digestive Health section in Chapter 11. You should then be able to digest FODMAPs, although you probably still want to avoid wheat and dairy.

Supplements and Herbal Medicines for Endometriosis

The best supplements for endometriosis are those that normalize immune function and reduce inflammation.

Turmeric reduces the size and activity of endometriosis lesions [319]. I prescribe turmeric capsules for almost all my endometriosis patients.

How it works: Turmeric or curcumin works by several potential mechanisms.

1. Downregulating a proinflammatory transcription factor called NF-kappa B and accelerating healthy cell death or apoptosis in the lesions [320].
2. Suppressing the local production of estrogen in endometriosis lesions [321].
3. Inhibits angiogenesis or the growth of new blood vessels [322].

What else you need to know: Turmeric is easier to absorb when you ingest it with fat. I recommend a high-dose curcumin capsule to be taken with a meal.

Zinc is essential for healthy immune function and for keeping inflammation in check. Some researchers have proposed that zinc deficiency plays a role in the development of endometriosis [323].

How it works: It repairs intestinal permeability [324] thereby improving immune function. It's also anti-inflammatory [325] and reduces pain [326]. See previous zinc sections for dosing instructions.



You shouldn't need a lot of supplements. Please start with a dairy-free diet, turmeric, and zinc. And then consider some of the following additional supplements.

Berberine is another anti-inflammatory herbal medicine that is currently being investigated as a treatment for immune dysfunction and autoimmune disease [327]. It has not yet been researched or trialed for endometriosis, but I've included it here based on good results I've seen with my patients.

How it works: It shelters the immune system from the bacterial toxin LPS [328]. It also repairs intestinal permeability [329] and downregulates pro-inflammatory genes [330].

What else you need to know: There are a number of precautions with berberine including interactions with several medications. Please see the [Berberine](#) section in Chapter 7.

Resveratrol is phytonutrient found in grapes, berries, and other fruit. It's showing great promise for endometriosis and was included in a recent survey of new pharmacological treatments [\[331\]](#).

How it works: It reduces inflammatory cytokines and inhibits angiogenesis or the growth of new blood vessels [\[332\]](#). Resveratrol also downregulates aromatase, which is the enzyme that makes estrogen [\[333\]](#).

What else you need to know: I recommend 100 to 400 mg per day with food. It is safe for long-term use.

N-acetyl cysteine (NAC) is a version of the amino acid cysteine. It did well in a recent clinical trial for endometriosis. Of the 47 women in the NAC treatment group, 24 canceled their scheduled laparoscopy due to a disappearance of endometrioma cysts, a reduction in pain, or pregnancy [\[334\]](#).

How it works: NAC is the precursor to glutathione which is the body's primary antioxidant and *immune regulator*. It reduces inflammation.

What else you need to know: NAC has the nice side benefit of reducing anxiety. Too much NAC can thin your stomach lining, so please do not take if you have gastritis or stomach ulcers. I recommend 500 to 2000 mg per day.

Selenium is anti-inflammatory and having sufficient selenium has been correlated with a reduced risk endometriosis [\[335\]](#).

How it works: It modulates and normalizes immune function. It is also essential for the production of progesterone.

What else you need to know: I recommend 100 to 150 mcg per day. Selenium can be toxic in high amounts, so please do not exceed 200 mcg per day from all sources, including high-selenium foods such as Brazil nuts.

Micronized progesterone or natural progesterone as a capsule or topical cream is another natural treatment option for endometriosis.

How it works: Progesterone inhibits the growth of endometriosis lesions [\[336\]](#).

What else you need to know: Progesterone may not work as a stand-alone treatment for endometriosis, but it can work in combination with

the immune modulating treatments discussed earlier. See the [Natural Progesterone](#) section in Chapter 10.

Your long-term outcome with endometriosis depends on many things including:

- Location and severity of the endometriosis lesions
- Effectiveness of the surgery
- Presence of adhesions
- Coexisting conditions such as adenomyosis, interstitial cystitis, and pelvic floor dysfunction



interstitial cystitis

Interstitial cystitis is also called painful bladder syndrome. It is the constant sensation of pressure or pain in the bladder and pelvis.



Physical treatments such as acupuncture and specialized massage can be helpful for adhesions.

There's no easy fix for endometriosis, but natural treatment can greatly improve the condition in the long-term.



Hannah: Second surgery for endometriosis

Hannah had always had painful periods, but she had her first real endometriosis attack when she was 23. The pain, nausea, and diarrhea were severe enough to take her to the hospital where she was told she might have an ovarian cyst and was given antibiotics. Endometriosis was not mentioned by the doctors at that time.

Hannah then suffered two years of ongoing chronic abdominal pain and bloating and was diagnosed with irritable bowel syndrome (IBS). She tried various natural treatments including stopping dairy and wheat, which seemed to help.

When Hannah was 25, she had her second severe attack which turned out to be a burst endometrioma or chocolate cyst. She underwent emergency surgery during which extensive endometriosis was discovered and removed. She was prescribed the progestin drug Visanne to try to prevent recurrence.

By the time I met Hannah at 27, she was not doing well. She had anxiety and yeast infections from the Visanne. And she was still in pain almost every day. She had pain when waking in the morning and she had pain with sex that made it impossible for her to have intercourse with her fiancé.

“I don’t even recognize myself anymore,” she said.

Hannah had spoken to her family doctor who advised her to “wait until she was ready to have a baby” and then have a second surgery. The doctor’s reasoning is that surgery improves fertility for six to twelve months and so Hannah should not “waste” surgery by having it too soon. “But this kind of pain is unacceptable,” I said. “You can’t go on like this. I think perhaps you should have the second surgery now, but this time have it done properly by someone who understands endometriosis. And then we’ll use natural treatment to prevent recurrence.”

I referred Hannah to a gynecologist who specializes in endometriosis surgery. I also asked her to talk to him about using Prometrium micronized progesterone capsules instead of Visanne because natural progesterone has fewer side effects.

At the same time, I encouraged Hannah to continue to strictly avoid dairy and gluten which she was already doing. I also prescribed 30 mg of zinc and a concentrated turmeric liquid that delivered 340 mg curcumin per dose. Even before she had the surgery five weeks later, Hannah’s pain had already improved by 20 percent.

Hannah underwent “excision surgery” with the new surgeon, and it took two hours to remove a large number of lesions. The doctor then prescribed Prometrium to be taken during her luteal phase.

Hannah had some pain for the few weeks after surgery, but then started to improve. By three months post-surgery, the pain was on average about 60 percent better.

I expect Hannah to continue to improve over the coming months and years. If not, I will recommend some of the additional treatments mentioned above.

Checklist for endometriosis

- Seek a gynecologist who understands endometriosis
- Consider having excision surgery
- Avoid cow's dairy and maybe gluten
- Consider taking zinc, turmeric, and NAC

Period Pain

This section is about *normal* period pain—not the severe pain of adenomyosis or endometriosis discussed above. Normal period pain is mild pain for a day or two when your period starts. It responds to painkillers and does not prevent you from attending school or work.

Normal period pain also responds well to natural treatment. Essentially, it should *disappear* with natural treatment. If it doesn't, then it's not normal period pain.

By “normal” period pain, I mean *common* period pain that is not caused by adenomyosis or endometriosis. I don't mean that period pain is *normal*. In keeping with the message throughout this book, I will say that you have the right to *easy, pain-free periods*. You simply do not have to put up with period pain.

What Causes Period Pain?

As your uterine lining starts to break down at the end of your cycle, it releases prostaglandins. They stimulate your uterine muscle to contract to aid with the shedding of the lining. Prostaglandins are a normal part of the process, but *too many* prostaglandins can cause pain. The treatment strategy is to reduce prostaglandins.

Conventional Treatment of Period Pain

Ibuprofen

Ibuprofen (Advil or Nurofen) blocks prostaglandins and relieves period pain. I don't have a problem with my patients taking the occasional ibuprofen if that's what they need to do. In fact, earlier in this chapter, I recommended ibuprofen as a treatment for heavy periods.

That said, you will probably find that once you get started on natural treatment, you will not need ibuprofen.

Diet and Lifestyle for Period Pain

Avoid cow's dairy

My clinical observation is that avoiding normal cow's dairy can eliminate period pain. I first discovered it 25 years ago during my training. When I stopped having dairy, I stopped having period pain. Since then, I've seen the same result with thousands of patients.

You can still have goat and sheep milk products. Please see the Dairy section in Chapter 6.

Identify and treat histamine intolerance

Histamine intolerance is another cause of period pain. Remember, histamine intolerance is the condition of having too much histamine. It can cause or worsen headaches, anxiety, insomnia, brain fog, hives, nasal congestion, as well as cause or worsen period symptoms problems because it increases both inflammation and estrogen. Please see the [Histamine Intolerance](#) section in Chapter 8.

Supplements and Herbal Medicines for Period Pain

Magnesium is your number one supplement for period pain.

How it works: It reduces prostaglandins ^[337] and relaxes the uterus.

What else you need to know: Magnesium is both prevention and acute care for period pain. You can take magnesium throughout the month to prevent the formation of too many prostaglandins. You can also take more magnesium during your period to relieve acute pain. I recommend 300 mg magnesium glycinate taken once or twice daily.

Zinc prevents period pain. We saw zinc as an immune-modulating treatment for endometriosis, but it also helps with normal period pain. It's performed well in a couple of clinical trials ^[338] ^[339].

How it works: It inhibits prostaglandins and inflammation. See previous zinc sections for dosing instructions.

Turmeric was already mentioned as a treatment for heavy periods, adenomyosis, and endometriosis. Here it is again for period pain. You can see that I prescribe turmeric quite frequently for period problems.

How it works: It reduces prostaglandins.

What else you need to know: For best effect, take a standard dose (one tablet) every day throughout the month. Increase the dose when you have pain. The exact quantity of the herb depends on the concentration of the formula, so please use as directed on the bottle. Maximum dose is six tablets per day.



You don't need *all* the supplements. I usually start with a simple prescription of dairy-free diet and zinc.

Fish oil has been shown to reduce period pain by 30 percent after two months [\[340\]](#).

How it works: Omega-3 fatty acids reduce prostaglandins and inflammation.

What else you need to know: I recommend 2000 mg per day. It can also be helpful to eat less inflammatory omega-6 fatty acids, as discussed in Chapter 6.

Checklist for period pain

- Avoid cow's dairy
- Consider histamine intolerance
- Consider taking zinc and turmeric

Bleeding Between Periods

Bleeding or spotting between periods is common and can occur for lots of different reasons.

Ovulation spotting

Ovulation spotting is typically bright red and happens because your estrogen dips a little just before your LH surge and egg release. Ovulation spotting does not require treatment.

Premenstrual spotting

Premenstrual spotting is a darker color. It usually means you do not have enough progesterone to maintain and hold your uterine lining. The solution is to support progesterone with all the treatments discussed earlier in this book. And as we saw in the [Roadmap to Progesterone](#) section in chapter 4, your progesterone in any given cycle is the result of the health of your corpus luteum, which is the result of the health your ovarian follicle during all its hundred-day journey to ovulation.

Premenstrual spotting can also be a sign of an underlying thyroid problem. Please ask your doctor to test your thyroid according to the criteria I outline in the [Thyroid Disease](#) section in Chapter 11. If you have underactive thyroid or hypothyroidism, then your best treatment may be supplementary thyroid hormone.

Finally, spotting can mean you're having anovulatory cycles, such as occur with PCOS. Your best solution is to re-establish regular ovulation as described in Chapter 7.

Other causes of spotting

There are other reasons to bleed between periods. They include pregnancy, infection, endometriosis, ovarian cysts (discussed below), and uterine polyps as we saw with [Theresa's](#) story in Chapter 5. If bleeding is a new symptom for you, or if you notice other changes with your periods such as heavy bleeding, clotting, or pain, then please see your doctor for a diagnosis.

Ovarian Cysts

Your ovaries always have “cysts” or fluid-filled sacs of some shape or size. Most of the time, they are your growing ovarian follicles and corpus luteum.

Every month, those normal cysts grow, burst, and are reabsorbed. Occasionally, there is a glitch, and one of your follicles becomes abnormally large and fluid-filled, forming an abnormal ovarian cyst. If your doctor suspects an ovarian cyst, she may order a blood test and a pelvic ultrasound to figure out what type of cyst it is.

Functional ovarian cyst

The most common type of abnormal ovarian cyst is a functional cyst. It forms when your ovarian follicle does not successfully rupture and release its egg. Instead, the follicle continues to grow and swell. Most functional cysts reach about 2 cm, but some can grow to 10 cm (4 inches) or more. Functional cysts are always benign.

Small functional cysts are harmless and symptomless. You probably have them and never even know unless they're picked up as an incidental finding on an ultrasound. Small functional cysts will usually reabsorb and go away on their own. They do not require treatment.

Larger functional cysts can cause symptoms such as pelvic fullness, pain, nausea, and spotting between periods. Rarely, they can rupture or twist and cause severe pain, which requires immediate medical attention.

Some functional cysts are the result of thyroid disease or hypothyroidism [341]. If you have recurrent ovarian cysts, please make sure your doctor tests your thyroid. You may require thyroid hormone to prevent the formation of future ovarian cysts.

Polycystic ovaries

The multiple small “cysts” of polycystic ovarian syndrome (PCOS) are something a bit different. They are *not* abnormally large follicles. Instead, they are abnormally *small* follicles that are in a state of partial development. They do not require the treatment discussed in this section. Please see the [PCOS section](#) in Chapter 7.

Chocolate cyst

Chocolate cysts are endometriosis lesions. Please see the [Endometriosis](#) section above.

Dermoid cyst

Dermoid cysts are solid, benign (usually) ovarian tumors. They are strange in that they can contain hair or even teeth. Treatment is usually surgical removal, although some doctors may decide to watch and wait [342]. Once removed, dermoid cysts rarely grow back.

As strange as they are, dermoid cysts are reasonably common. I've had at least six or seven patients who have had them.

Conventional Treatment of Ovarian Cysts

Watch and wait

For cysts smaller than 5 cm, the medical approach is to watch and wait. They will usually disappear on their own.

Surgery

Cysts larger than 5 cm *may* require surgical removal, but please seek a second opinion before going under the knife. According to endocrinologist Dr. Jerilynn Prior, ovarian cysts are only rarely the cause of severe pain.

Hormonal birth control

Hormonal birth control suppresses ovulation, thereby preventing the formation of any kind of cyst (normal or otherwise). It can *prevent* the formation of functional cysts, but it *cannot treat* them once they have formed [\[343\]](#).

The Mirena (hormonal IUD) *causes* ovarian cysts in 5 percent of users [\[344\]](#).

Diet and Lifestyle to Prevent Ovarian Cysts

Natural treatments work to *prevent* ovarian cysts. They cannot necessarily shrink a large cyst once it exists.

Avoid cow's dairy

Again, my clinical observation is that dairy makes women more prone to ovarian cysts, possibly because inflammation hyper-sensitizes the follicles to estrogen. Cow's dairy also stimulates histamine, which plays a signaling role in the ovary [\[345\]](#).

Identify and treat histamine intolerance

We discussed histamine intolerance in a few places in the book including the PMS chapter and the period pain section earlier in this chapter. My clinical observation is that histamine intolerance makes women prone to ovarian cysts. Please see the Histamine Intolerance sections in Chapters 6 and 8.

Supplements and Herbal Medicines to Prevent Ovarian Cysts

Iodine may help to prevent ovarian cysts. That is my clinical observation, but unfortunately, there are no studies at this stage.

How it works: As we've seen in previous sections, iodine can down-regulate and stabilizes estrogen receptors. That can potentially prevent hyperstimulation of the ovarian follicles by estrogen.

What else you need to know: Too much iodine can harm your thyroid, so please do not exceed 500 mcg (0.5 mg) except under professional advice.

Selenium is another consideration for ovarian cysts.

How it works: It promotes healthy ovulation and aids with the formation of a corpus luteum. Selenium also makes it safer to take iodine.

What else you need to know: I recommend 100 to 150 mcg per day. Selenium can be toxic in high amounts, so please do not exceed 200 mcg per day from all sources including high-selenium foods such as Brazil nuts.

Checklist for ovarian cysts

- Polycystic ovaries are something different. Please see Chapter 7
- Consider avoiding cow's dairy and taking low dose iodine

A Final Word About Painful or Difficult Periods

You have the right to easy, pain-free, symptomless periods. With the right treatment, you should be able to get there—or at least much closer than you are now.

If you are a teenager with heavy periods or normal period pain, then you should expect to see complete resolution of your symptoms within a few months.

If you have endometriosis or adenomyosis, then you are facing a tougher battle. As discussed, endometriosis is a serious, whole-body inflammatory disease. It requires serious treatment which sometimes includes surgery. Still, endometriosis can be greatly improved by using natural treatments alongside conventional treatments.

If you have the heavy, flooding periods of perimenopause, you may be facing surgery and need additional stronger help such as micronized

progesterone. Please read the next chapter.

Chapter 10



What Happens in Your 40s

In your 30s or 40s? You may be experiencing symptoms you did not expect to see until your 50s: Hot flashes, sleep problems, mood swings, and crazy heavy periods. Is this menopause already, and you're only 42? No, menopause may still be a decade away. This is *perimenopause*, which is the decade or more leading up to menopause [346].

Never heard of perimenopause? You're not alone. Researchers, journalists, and even doctors use the word menopause when, in reality, they're referring to perimenopause.

Menopause and perimenopause are *not* the same things. For example, menopause is a time of *low* estrogen. Perimenopause is a time of “estrogen on a roller coaster” when you can, at times, have *more* estrogen than you ever had before.

And yet—bizarrely—your doctor may offer you estrogen replacement during perimenopause. Do you really want more estrogen when your own is already surging too high?

So, let's get our definitions straight.

Perimenopause is the two to twelve years *before* menopause and is when you're most likely to experience symptoms.

Menopause is the life phase that begins one year after your last period [347] and is when any symptoms will likely settle down.

You can expect to be healthy and symptom-free in menopause, which is good because you'll spend a third of your life there. You may encounter a few issues, which we'll look at in the Life After Periods section at the end of this chapter.



The average age of the onset of perimenopause is 45, but you may notice changes many years before.

What are the changes of perimenopause? According to Canadian endocrinologist Jerilynn Prior, a midlife woman is likely to be in perimenopause if she has any three of the following nine changes, despite regular menstrual cycles [348]:

- New onset heavy and/or longer flow
- Shorter menstrual cycles (≤ 25 days)
- New sore, swollen, or lumpy breasts
- New mid-sleep waking
- Increased menstrual cramps
- Onset of night sweats, in particular premenstrually
- New or markedly increased migraine headaches
- New or increased premenstrual mood swings
- Weight gain without changes in exercise or eating



Please see Dr. Prior's book *Estrogen's Storm Season--stories of perimenopause* available from the CeMCOR website [\[349\]](#).

Perimenopausal changes are not fun, and they can come on quite quickly. You may be going along in your busy life and then, suddenly, find you just don't feel like yourself. If you seek help from your doctor, she will either tell you just to ride it out, or she'll offer the pill, estrogen, or an antidepressant. None are of much help.

"There has to be a better way!" you say. And fortunately, yes there is. It all starts with understanding what your hormones are up to.

Estrogen Goes on a Roller Coaster Ride

Contrary to what you've heard, your estrogen is not on a slow, gradual decline in your 40s. It would be a lot nicer if it were because then you could experience a slow, gradual transition to menopause. Instead, your estrogen is doing the worst possible thing: It's fluctuating wildly. It's soaring to twice what it was before [\[350\]](#) and then crashing down again to almost nothing. And it's doing that again and again—cycle after cycle.

I call it the *estrogen roller coaster* of perimenopause.

Symptoms of high estrogen include breast pain, heavy periods, fluid retention, and irritable mood. Symptoms of *dropping estrogen* include depression, night sweats, heart palpitations, and hot flashes.



If you have ovaries, you will go through perimenopause—even if you've had a hysterectomy and do not have a uterus.

You might be okay

Not all of you will experience bad symptoms. Dr. Prior estimates that only 20 percent of women go through such dramatic ups and downs of estrogen. Many of you will notice only a few mild changes that won't bother you much.

And some of you may be lucky enough to experience perimenopause as just a gradual lightening and fading away of your periods. In that case, yes, both your estrogen and progesterone are in decline, but you can definitely adapt to your new *normal* level of hormones.

Progesterone Becomes Seriously Deficient

At the same time that your estrogen is bouncing up and down, your progesterone is quietly exiting the scene. It's unfortunate because progesterone's soothing effects would have made estrogen's roller coaster a lot easier to bear. Remember, progesterone counteracts estrogen, thereby preventing estrogen excess symptoms such as heavy periods. Progesterone also shelters your nervous system from precipitous drops in estrogen.

Progesterone was hard enough to make in your 20s and 30s. It's even harder in your 40s because your ovarian follicles are not as active or responsive as they were [\[351\]](#). The change to your follicles is genetically programmed and a natural, normal process. It's not because you've done something wrong, and it's *not* because you're running out of eggs.

Special Topic: Myth Busted—Women Do Not Run Out of Eggs

We used to think women are born with about 400,000 dormant eggs that get used up and eventually run out. New research suggests that is completely wrong.

You may, in fact, have ovarian stem cells that could continue to make new, viable eggs indefinitely [\[352\]](#), which biologically, makes a lot more sense. According to researcher Jonathan Tilly:

“There’s no fathomable reason why a woman would have evolved to carry stale eggs around for decades before attempting to get pregnant while men evolved to have fresh sperm always available.” [\[353\]](#)

If you have ovarian stem cells, then you do not simply run out of fertility because you’re old. You *could* keep reproducing, but you won’t, and scientists think they know why. It’s because you’re genetically programmed to stop reproducing while still relatively young to be able to give time and resources to your potential descendants. It’s called the “grandmother theory” [\[354\]](#) and has been proved in orca whales, one of the only other species to undergo menopause [\[355\]](#).

Yes, it’s sad to lose progesterone, but at the same time, it was great to have it for even those few short decades.

Here’s how I see it: The fact that we have to lose progesterone eventually should make us more grateful to have ever had it at all. And more determined to *not* switch it off with hormonal birth control.

What can you do to ease your way through perimenopause? As it turns out, your best strategy is the one we’ve used again and again throughout the book:

1. Support progesterone
2. Metabolize estrogen
3. Reduce inflammation

The main difference with perimenopause is that you may need to work a little harder at it. You may also choose to supplement progesterone.

Let’s have a look.

Perimenopausal Mood, Sleep, and Hot Flashes

Perimenopause can be a tricky time for mood.

For one thing, it's happening at a time when you could be pretty busy with career and family obligations. You're potentially dealing with a lot of stress.

On top of that, your stress response system or HPA axis is changing due to the loss of progesterone [\[356\]](#). Recall from Chapter 6 that progesterone (allopregnanolone) helps to *regulate the HPA axis*. Progesterone every month is what your nervous system is *used to*.

When progesterone decreases at perimenopause, your nervous system has to change and adapt. That adaptation process can cause symptoms such as anxiety, depression, and insomnia [\[357\]](#)—but it won't last forever.

Eventually, you'll reach menopause, and then your mood should be at least as good as it was when you were younger, and maybe even better [\[358\]](#).

“Women need to know that perimenopause ends in a kinder and calmer phase of life appropriately called menopause.” [\[359\]](#)

Dr. Jerilynn Prior

Hot flashes and heart palpitations

Hot flashes are another symptom of the same temporary dysregulation of your HPA axis.

Heart palpitations are common during perimenopause and may be the result of stress or too little progesterone compared to estrogen [\[360\]](#).

Both hot flashes and heart palpitations respond to the treatments discussed below. Perimenopausal hot flashes do not respond to the estrogen treatment often prescribed for menopausal hot flashes [\[361\]](#).

Special Topic: Perimenopause and Histamine Intolerance

During perimenopause, you may notice other strange allergy-like symptoms such as brain fog, hives, and nasal congestion. Or you may experience a worsening of existing allergies such as hay fever. You're not imagining things. The combination of high estrogen and low

progesterone can dramatically worsen the *histamine intolerance* [\[362\]](#) we discussed in Chapters 6 and 8.

Conventional Treatment of Perimenopausal Mood, Sleep, and Hot Flashes

Conventional treatments are antidepressants, the pill, or estrogen treatment—none of which are all that effective [\[363\]](#). I advise against taking the pill and/or estrogen because perimenopause is already a time of high estrogen. There's no evidence that taking estrogen can prevent the estrogen surges that characterize perimenopause. Progesterone is a better option, as we'll see.

A low-dose estrogen supplement may be appropriate in menopause.

Diet and Lifestyle for Perimenopausal Mood, Sleep, and Hot Flashes

Rest and self-care

You are at a vulnerable time. You have permission to slow down and look after yourself, at least until you arrive safely in menopause. For example, you might want to look at temporarily cutting back your work hours, or hiring someone to help you at home. Sign up for a yoga class. Book a massage. Being in my late 40s finally convinced me to start to meditate regularly.

Reduce alcohol

Alcohol impairs the healthy metabolism of estrogen, and that can be a problem when your estrogen is already soaring to twice what you had before. Alcohol also reduces progesterone [\[364\]](#) and interferes with progesterone's calming action in the brain [\[365\]](#).

Supplements and Herbal Medicines for Perimenopausal Mood, Sleep, and Hot Flashes

Magnesium is a powerful stress-reliever. If you take one supplement during perimenopause, let it be magnesium.

How it works: It boosts GABA, regulates the HPA axis, and promotes sleep.

What else you need to know: I recommend 300 mg magnesium glycinate with food. I prescribe magnesium for almost every perimenopausal patient, and I usually prescribe it together with the amino acid taurine.

Taurine is an amino acid that calms the brain.

How it works: It boosts GABA and blocks adrenalin.

What else you need to know: Taurine is obtained from animal products, but it's depleted by estrogen so, as a woman, you need more taurine [\[366\]](#). I recommend 3000 mg per day together with magnesium.

Vitamin B6 is the amazing PMS treatment we discussed in Chapter 8. It has similar benefits for perimenopausal mood symptoms.

How it works: It promotes healthy estrogen metabolism and boosts GABA.

What else you need to know: I recommend 20 to 100 mg.

Ashwagandha (*Withania somnifera*) is an herbal medicine that dials down the stress response.

How it works: It stabilizes the HPA axis, and also has direct anti-anxiety and sleep-promoting effects (hence the Latin name *somnifera* or “sleep-inducing”).

What else you need to know: The exact quantity of the medicine depends on the concentration of the formula. Doses range from 300 to 3000 mg and may be taken in a formula that contains other adaptogens such as *Rhodiola*.

Ziziphus is an herbal sedative traditionally prescribed for perimenopause.

How it works: It's a non-addictive sedative [\[367\]](#).

What else you need to know: It's typically combined with magnolia (*Magnolia officinalis*) for a stronger effect [\[368\]](#). Dose as directed.

Micronized or natural progesterone is helpful for both perimenopausal insomnia and hot flashes [\[369\]](#).

How it works: It improves sleep by acting on GABA receptors to reduce anxiety [\[370\]](#) and by acting directly on sleep centers [\[371\]](#). It relieves hot flashes by modulating the activity of the hypothalamus.

What else you need to know: You can use cream or capsule, but a capsule works better for sleep. Ingesting progesterone means that more of it converts to the sedating metabolite allopregnanolone (ALLO).

Progesterone capsules are called micronized progesterone and can be prescribed as a compounded capsule or the brand Prometrium .

Take it for the last 14 days of your expected cycle and take it at bedtime because it will make you sleepy. For more information, please see Dr.

Prior's paper: *Progesterone for Symptomatic Perimenopause Treatment – Progesterone politics, physiology and potential for perimenopause* [\[372\]](#).

Checklist for perimenopausal mood, sleep, and hot flashes

- Make more time for yourself
- Reduce or eliminate alcohol
- Consider taking magnesium, taurine, and micronized progesterone



Rescue prescription for perimenopausal mood and sleep problems: Magnesium plus taurine plus micronized progesterone.



Lori: Rescue prescription for perimenopause

Lori was 47 when she hit what she called “the wall.” “I’ve started feeling anxious,” she told me. “Out of nowhere. And suddenly, I can’t sleep. I fall asleep but then jolt awake a few hours later.”

Lori had a busy life, so it didn’t take long for her to start feeling pretty desperate. She saw her doctor who offered antidepressants.

“I don’t think I’m depressed,” she said. “I’ve never had a problem before. I feel like something’s really changed in my body.”

I asked Lori about her periods, and she said they were coming closer together and were heavier than they used to be. I had a pretty good idea what was going on.

I ordered a couple of blood tests. The first was thyroid, which was normal, and the second was a day 3 FSH or follicle-stimulating hormone. It’s the test for menopause, and it was normal at 18 mIU/mL.

We talked a bit more about her symptoms. Lori had new breast pain before her periods, and she'd noticed a bit of weight gain.

"You're in perimenopause," I said. "Your hormones are fluctuating pretty dramatically, but menopause itself could still be five years away."

Lori: "I can't go through five more years of this."

Lori ate well; she exercised, and even meditated 15 minutes per day. I felt Lori was already doing everything right, but she needed something more.

I offered her my "rescue prescription for perimenopause" which is a magnesium powder with taurine and vitamin B6, plus a progesterone capsule to be taken at bedtime during the two weeks before her period. The first night she took the supplements she slept eight solid hours and then continued to feel a steady return to her *normal self*.

There's no blood test for perimenopause

If Lori's FSH had been high at 80 mIU/mL, then I would have predicted that her periods will soon stop. As it was, Lori's FSH test was normal. She was probably going to keep menstruating for a few more years, but that didn't mean everything was okay. She had symptoms of perimenopause, and she was 47. She needed help.

The main reason I ordered blood tests for Lori was to check her thyroid.

Is It Perimenopause or Thyroid or Both?

Thyroid disease can look and feel a lot like perimenopause. For example, both conditions cause depression, insomnia, weight gain, irregular periods, heavy periods, hot flashes, and especially *brain fog* or difficulty concentrating.

You could have perimenopause, or you could have thyroid disease, or quite possibly—you could have both. About 26 percent of perimenopausal women also have autoimmune thyroid disease [\[373\]](#).

If you think you're suffering symptoms of perimenopause, please also consider thyroid.



Rae: Am I in early menopause?

I could see that Rae was worried. She'd brought her partner Sam to our appointment, and he looked pretty worried too.

"My periods have gone all haywire," she told me (meaning her periods had become irregular.)

"I'm losing hair, and I'm having night sweats—" Rae paused, then finally asked me: "Am I in early menopause?"

Rae was only 34.

"Probably not," I said because premature menopause is not common (see below). "But let's do a blood test and find out."

As I suspected, Rae's FSH was fine at 8 mIU/mL. Her TSH, on the other hand, was 45 mIU/L which meant she had hypothyroidism or underactive thyroid.

I explained to Rae that hypothyroidism or low thyroid was the cause of her irregular periods and night sweats, and I recommended she take thyroid hormone. After two weeks, her night sweats disappeared. After three months, she regained regular periods.



TSH

TSH (thyroid stimulating hormone) is a pituitary hormone that stimulates your thyroid gland. It's the standard test for thyroid dysfunction and should be between 0.5 and 4 mIU/L.

Rae did well with simple testing and treatment with thyroxine. Depending on your situation, you may require additional thyroid testing and treatment. Please see the thyroid section in the next chapter.



Progesterone supports thyroid.

If you're perimenopausal and your thyroid is just a little bit low, you may benefit from natural progesterone, which has been shown to *increase* thyroid hormone [\[374\]](#).

The Heavy Menstrual Bleeding of Perimenopause

Heavy menstrual bleeding is defined as blood loss of greater than 80 mL (16 regular tampons) or lasting longer than seven days. It can happen at any age, but it can be particularly bad during perimenopause when it can turn into *menstrual flooding* which is flow so heavy you bleed through your tampon or pad.

Do you have a medical condition?

Heavy menstrual bleeding can be secondary to a medical condition such as ***thyroid disease, coagulation disorders, fibroids, or adenomyosis***. We discussed those common conditions in Chapter 9, and let me say here that *doctors miss them!*

It's worth asking your doctor outright: "Have I been tested for thyroid disease? Have I been tested for a coagulation disorder?" And finally, "Do I have adenomyosis? Can I please see a copy of my ultrasound report?"

Please see the [How to Talk to Your Doctor section](#) in the next chapter.

The stakes are high

The heavy menstrual bleeding of perimenopause can become quite serious and, if untreated, can escalate to the point of requiring surgery. When I started practicing twenty years ago, way too many of my 40-something patients had lost their uteruses to hysterectomy as a treatment for heavy bleeding.

Fortunately, there are better options today—both conventional and natural.

Conventional Treatment of the Heavy Menstrual Bleeding of Perimenopause

Ibuprofen

As we saw in the Heavy Periods section of the last chapter, ibuprofen can reduce your menstrual flow by half. It's a simple and practical solution and a good first step while you work on the other treatments. Take it on your heavy days and take with food to decrease the small risk of stomach irritation.

Hormonal birth control

Standard treatment includes the pill and the Mirena IUD. They work because progestins thin the uterine lining. It's worth noting that micronized or natural progesterone does the same thing, but without the many side effects of synthetic progestins.



The combination of ibuprofen plus micronized progesterone (discussed below) is highly effective for the heavy periods of perimenopause and will work for most of you. Please see *Managing Menorrhagia without Surgery* on Dr. Prior's CeMCOR site [\[375\]](#).

You should get results with micronized progesterone and the natural treatment discussed below. If not, and you feel you need some kind hormonal birth control, then please choose the Mirena IUD. It's better than the pill for the reasons I discussed in Chapter 2. Dr. Jerilynn Prior says the oral contraceptive pill should be avoided during perimenopause.

D and C (dilation and curettage)

D and C is the widening (dilation) of your cervix and the surgical removal of part of your uterine lining by scraping and scooping (curettage). It is done under general anesthetic.

The idea is that removing the thickened uterine lining will reduce flow, but it gives no lasting benefit. As soon as the uterine lining grows back, your flow will increase again.

D and C is an invasive procedure and is not a good treatment for perimenopausal heavy menstrual bleeding.

Tranexamic acid (Lysteda)

Tranexamic acid is a medication that increases blood clotting. Your doctor may give it to you as emergency medicine during very heavy flow, or she may ask you to take it every period. It carries a small risk of pulmonary embolism and deep vein thrombosis (blood clots).

Endometrial ablation

Endometrial ablation is the surgical destruction of your uterine lining. It's done under general anesthetic and destroys fertility, so will only be offered if you do not want more children.

Your hormones still cycle normally after ablation, but you don't build up a uterine lining, so you will bleed lightly or not at all. It doesn't work for everyone, and the effect lasts only about five years after which time your lining may grow back. About 22 percent of women require a repeat procedure, and many go on to require a hysterectomy anyway [\[376\]](#).

Ablation can trap blood behind scar tissue, which can cause long-term pelvic pain. That complication is more likely to occur after tubal ligation and is estimated to affect up to 10 percent of women who have undergone ablation [\[377\]](#).

Endometrial ablation is not ideal, but in my view, it's preferable to hysterectomy.

Hysterectomy

Hysterectomy (surgical removal of your uterus) has been the standard medical treatment for heavy bleeding for generations. It is still necessary for some women, but I encourage my patients to keep their uterus, if at all possible.

Hysterectomy doubles your long-term risk of vaginal prolapse and urinary incontinence [\[378\]](#). It can also adversely affect your sexual response and ability to orgasm, especially if your ovaries were also removed.

On the other hand, if a hysterectomy relieves intense symptoms such as pain and bleeding, then it may improve your sexual enjoyment.



Don't permit your doctor to remove your ovaries unless there is a clear medical reason to do so (such as ovarian cancer).

Remember, there are two types of hysterectomy: Total hysterectomy, when the surgeon removes your uterus and cervix and possibly your ovaries; and partial hysterectomy when the surgeon removes your uterus but leaves your cervix.

Removal of your uterus does *not* alter your hormones or cause menopause. You will still benefit from natural period repair.

Special Topic: Tracking Your “Virtual Periods” After a Hysterectomy

If you still have ovaries, then you still cycle, and have a “virtual period.”

For example, you could still ovulate and go through a premenstrual phase when you feel a bit irritable and headachy. You will then reach a *relief day* which is when your hormones drop, and you would bleed if you had a uterus.

That relief day is your “day 1”, and you can try tracking it with your period app.

At some stage after a hysterectomy, you will reach menopause. It will probably happen at the age you would have gone through menopause anyway.

Since you don’t bleed, you may not recognize that you’ve reached menopause. Look for symptoms such as hot flashes and vaginal dryness, and ask your doctor to test FSH (follicle stimulating hormone). An FSH greater than 40 IU/L marks the onset of menopause.

It’s okay to resort to conventional treatment

Despite all your best efforts, you may require surgery or medical treatment for heavy menstrual bleeding. It’s not a failure on your part. You cannot be expected to endure very heavy periods for long. It’s still worth trying natural treatment because there’s good chance it will work and, even if it does not, you will still benefit from its hormone-balancing effects.

Now let’s look at some natural treatment options. Many are the same as we discussed in the heavy periods section in the last chapter.



Natural treatment of heavy periods works as prevention, not as acute care. Once a heavy bleed is fully underway, there is nothing natural that can stop it. You can take ibuprofen to slow it, and most of the time, the bleeding will eventually stop on its own.

If you feel dizzy or unwell, please see your doctor. You may need the clotting drug tranexamic acid (Lysteda).

Diet and Lifestyle for the Heavy Menstrual Bleeding of Perimenopause

Avoid cow's dairy

As we discussed in Chapter 9, dairy makes periods heavier.

Reduce alcohol

Alcohol impairs your liver's ability to metabolizes estrogen and, therefore, increases your exposure.

Maintain a healthy gut bacteria

As discussed in the heavy period section, healthy gut bacteria escort estrogen safely out of your body. You want healthy estrogen metabolism, not just to reduce menstrual flow, but also to relieve other symptoms of estrogen excess, such as irritability and breast pain.



For a full discussion of breast pain and fibrocystic breasts, please refer to Chapter 8.

Eat phytoestrogens

Phytoestrogens reduce your exposure to estrogen by blocking estrogen receptors and promoting the healthy metabolism of estrogen.

Correct insulin resistance

There are two ways insulin resistance increases your risk of heavy periods:

1. It directly thickens the uterine lining.
2. It can impair ovulation and therefore cause low progesterone.

For treatment, please see the insulin resistance section in Chapter 7.



If you had insulin resistance and PCOS when you were younger, it is still likely to be a problem now.

Exercise

Exercise improves insulin sensitivity and promotes the healthy elimination of estrogen through perspiration.

Supplements and Herbal Medicines for the Heavy Menstrual Bleeding of Perimenopause

Turmeric lightens periods. Please see Chapter 9.

Iron corrects the iron deficiency caused by your heavy periods and also *lightens* period. Please see Chapter 9.

Diindolylmethane (DIM) is a phytonutrient from cruciferous vegetables such as broccoli, Brussels sprouts, cabbage, and kale.

How it works: It promotes healthy estrogen metabolism.

What else you need to know: DIM is safe and well tolerated. I recommend 200 mg per day with food.

Calcium d-glucarate promotes healthy estrogen metabolism. We met it in Chapter 8 as a treatment for PMS.

How it works: Glucarate assists with estrogen detoxification in two ways. First, it binds to estrogen in the liver and deactivates it. Second, it inhibits *beta-glucuronidase*, which is an enzyme made by gut bacteria that causes estrogen to be reabsorbed. Please see Chapter 5.

What else you need to know: I recommend 1000 to 1500 mg per day after food. It may also help to prevent breast cancer [\[379\]](#).

Natural progesterone makes periods lighter.

How it works: It thins your uterine lining, as do synthetic progestins such as medroxyprogesterone (Provera). But progesterone is a far nicer treatment because it is also soothing for mood (see above).

What else you need to know: A progesterone capsule such as Prometrium works better than a topical cream. You may require some months of continuous dosing. Take at bedtime as it will make you sleepy.

Checklist for perimenopausal heavy periods or flooding

- Rule out a medical cause such as thyroid disease
- Consider taking ibuprofen on your heavy days
- Consider taking micronized or natural progesterone
- Reduce alcohol
- Avoid cow's dairy
- Consider taking iron and turmeric
- See the Heavy Periods section in Chapter 9

Special Topic: Enhancing Fertility During Perimenopause

Your fertility will naturally decline during perimenopause because your ovarian follicles become less and less responsive. To a large extent, there is nothing you can do to change that, but there are a couple of strategies you can try.

DHEA (dehydroepiandrosterone) is a natural androgen hormone that promotes the development of the ovarian follicles. It has been used in some fertility clinics [\[380\]](#).

Coenzyme Q10 (CoQ10 or ubiquinol) may slow down the physiologically programmed decline in ovarian function. It works by supporting tiny cell organelles called mitochondria [\[381\]](#) which are like the “batteries” in ovarian follicles and all cells. Ovarian follicles have an unusually high number of mitochondria because they need so much energy. You can obtain CoQ10 from organ meat or supplement it.

Cyclic progesterone therapy as recommended by Dr. Jerilynn Prior. Please see the Resources section.

DHEA and CoQ10 are specific for enhancing fertility during perimenopause. They cannot be used to enhance fertility in other situations.



mitochondria

Mitochondria are tiny organelles inside your cells. They have many jobs including the manufacture of steroid hormones and cellular

energy.

Life After Periods

If you have the impression that menopause is difficult, it's because the transition to menopause can be difficult. Menopause itself can be easy and fine and may not require treatment.

During menopause, you will have far less estrogen and progesterone than you had before—but you'll still have *some*. For example, you'll have a small amount of both estrogen and progesterone from both your ovaries and adrenal glands. You'll also make estradiol *inside your cells* from the precursor hormone DHEA [\[382\]](#).

Altogether, that is enough hormone to keep you well, especially once you've had a chance to adapt.

The same cannot be said for premature menopause or surgical menopause. They are unique circumstances and almost always require hormone treatment.

Premature Menopause

Premature menopause, also called *premature ovarian failure* or *primary ovarian insufficiency* is defined as the loss of ovarian function before age 40. It's diagnosed by the blood test FSH discussed earlier in this chapter and affects about 1 in 100 women [\[383\]](#).

Factors contributing to primary ovarian insufficiency are genetics, autoimmune disease, and endometriosis [\[384\]](#). In most cases, the cause is not known.

If you've entered premature menopause, then you probably need menopausal hormone therapy (see below).

Surgical Menopause

Losing your ovaries to surgery is not normal menopause. For one thing, you'll experience a rapid decline in hormones that is very different from menopause and can cause terrible symptoms, such as hot flashes.

With surgical menopause, you'll also go on to have much lower levels of hormones compared to women in natural menopause. That will put you at greater risk of cardiovascular disease [385], dementia [386], osteoporosis [387], and some cancers [388]. You'll also likely suffer a greater reduction in libido and sexual function compared to menopausal women with ovaries [389]. Hormone therapy can help, but it won't entirely compensate [390].

Please hold on to your ovaries, if you can. I know it's not always possible. Speak to your doctor.

If your ovaries were removed when you were younger than 45, then you will probably need hormonal therapy until you reach about 50, which is the average age of menopause.

Problems That Can Arise in Menopause

Hot flashes

Hot flashes (vasomotor symptoms) can start during perimenopause or after you've had your last period. If your flashes start during perimenopause, then they could last as long as 10 years [391]. If they start after your last period, they will probably last only a couple of years. Either way, you may need treatment.

The magnesium plus taurine plus progesterone combination (discussed above) works well for menopausal hot flashes [392]. As do the herbal medicines black cohosh and sage. If your flashes are bad enough, you may need a low-dose estrogen supplement such as a natural estradiol patch (see below).

Vaginal dryness, reduced libido, and bladder infections

After menopause, you may experience something called *vaginal atrophy* which means the tissue of your vaginal wall becomes thinner, drier, and inflamed. It can cause a range of symptoms including:

- Reduced desire, arousal, and orgasm
- Painful intercourse
- Increased frequency of bladder infections
- Leaking urine
- Pelvic prolapse

The conventional treatment is a vaginal pessary of low dose estradiol (Vagifem) which I do recommend.

There's also a vaginal pessary of the hormone DHEA [393], which I have not yet tried with my patients but sounds promising. Please see the Resources section for a link to a DHEA pessary called Julva .

Another treatment for vaginal atrophy is the nutritional supplement sea buckthorn oil to be taken orally [394]. It contains no hormones.

Weight gain

In menopause, you may gain weight around your middle. It's because you've lost the *insulin-sensitizing* effect of estradiol and are therefore at greater risk of insulin resistance [395]. To combat this, please implement the treatment strategies discussed in the [Insulin Resistance section](#) of Chapter 7. You can also try a low-dose estradiol patch (see below) to improve insulin sensitivity.



Insulin resistance after menopause can also cause androgen symptoms similar to PCOS. Please see Chapter 7, including the [Anti-Androgen Treatment](#) section.

Osteoporosis

Your risk for osteoporosis will increase during the final year of perimenopause and the first five years of menopause. During that time, you could lose up to 10 percent of your bone density and be at greater risk of osteoporotic fracture [396].

Please keep in mind, however, that your *absolute risk* of osteoporosis depends on *many* things including the following:

- Celiac disease (gluten sensitivity)
- Smoking
- Heavy alcohol intake
- Corticosteroid medication
- SSRI antidepressant medication
- PPI stomach acid medication
- Depo-Provera contraceptive injection

- Insulin resistance
- Anorexia
- Amenorrhea
- Oophorectomy (surgical ovary removal)
- Deficiency of vitamin D, zinc, vitamin K2, magnesium, and protein

Many of these factors increase your osteoporosis risk by *at least as much as menopause*, if not more. For example, SSRI antidepressants double your risk of osteoporotic fracture [\[397\]](#).

Osteoporosis is a frightening diagnosis, but please think it through before submitting to the medications such as Fosamax or the injection Prolia . They have significant side effects and risks.

The first thing to consider is whether you have osteoporosis or only *osteopenia* which is not a disease but can be interpreted as the healthy, normal aging of bone [\[398\]](#).

The next thing to understand is that a bone density scan *cannot* accurately predict fracture risk [\[399\]](#), so please don't put too much faith in such a test.

The best way to improve your bone health is to correct any underlying risk factor such as smoking or antidepressant use. Beyond that, you can get results with eating well and exercising and maybe taking the nutritional supplements vitamin D, vitamin K2, magnesium, and collagen.

You can also look at supplementing hormones to improve your bone health. Hormones that are beneficial for bones include estradiol, progesterone, and DHEA (see below).

A full discussion of osteoporosis is beyond the scope of this book.

Bioidentical Hormone Therapy

You may not need to take hormones in menopause. If you do, please make sure they are *bioidentical*.

Bioidentical hormones are derived from plant sterols such as wild yam, but so are all types of hormone drugs. That's *not* why bioidentical hormones are better.

Bioidentical hormones are better because they're structurally identical to your own human hormones. In that way, they are different from the pseudo-

hormones or horse hormones of hormonal birth control or conventional hormone therapy.



Bioidentical means “nature identical.”

The most commonly prescribed bioidentical hormones are progesterone, estradiol, and DHEA.

Micronized or Natural Progesterone

Natural progesterone is also called bioidentical progesterone or micronized progesterone. Your doctor prefers the last term. I recommend you **not** use the words natural or bioidentical when speaking with your doctor. In the case of progesterone, say instead *oral micronized progesterone* or the brand name Prometrium .

Micronized progesterone is the same progesterone you would normally make after ovulation. If you cannot make enough progesterone, then you can supplement it. Taking progesterone is a way to compensate for low progesterone deficiency and relieve symptoms. It cannot increase production of your *own* progesterone. To do that, you need to follow the many guidelines discussed in this book.

Micronized progesterone is completely different from a progestin such as levonorgestrel used in hormonal birth control.

I mentioned micronized progesterone a few times in the book. It’s helpful for PCOS, PMS, migraines, heavy periods, adenomyosis, endometriosis, perimenopause, menopause, and osteoporosis [\[400\]](#).

Cream versus capsule

You can take progesterone as a cream or capsule. A cream works well for mild problems, such as PMS. A capsule is better for heavy periods, adenomyosis, endometriosis, and perimenopausal mood and sleep symptoms. Progesterone is also available as a vaginal pessary, which is typically given as part of fertility treatment.

Dose and timing

An over-the-counter progesterone cream is 2 percent progesterone, so one gram (a quarter teaspoon) delivers 20 mg progesterone. That's a good starting dose for conditions like PMS. Apply at bedtime to your face, inner arms, or behind your knees—all places where your blood vessels are close to the surface. That way, the hormone goes directly into your blood and is not stored in fat.

A progesterone capsule is typically 100 mg which is suitable for heavy periods and perimenopause. Take only at bedtime as it can be very sedating.



Prometrium is a brand of micronized progesterone.

If you ovulate regularly, then take progesterone after ovulation during your luteal phase. If you do not ovulate, then please speak to your doctor about the best time to take progesterone. (And also find a way to ovulate, if possible.)

Safety and precautions

When dosed appropriately, natural progesterone should have no side effects. At a high dose, it can cause abdominal bloating and breast tenderness. If you experience such side effects, then reduce your dose or stop it.

Natural progesterone does *not* cause breast cancer like other progestins. Instead, it may prevent and one day, even be used to *treat* breast cancer [\[401\]](#).

Natural progesterone does *not* cause cardiovascular disease like other progestins. Instead, it reduces cardiovascular risk [\[402\]](#).

Estrogen

An estrogen supplement can be incredibly helpful for mood, sleep, hot flashes, and vaginal dryness.

Yes, menopausal hormone therapy does carry some risk but not as much as you may have thought. The worst risk from hormone therapy was with the drugs Premarin and Provera back in the 80s and 90s. Those drugs were *not* bioidentical hormones. Instead, they were a mix of the horse estrogens estrone sulfate, equilin sulfate, equilenin sulfate, and a progestin

called medroxyprogesterone. Those drugs caused numerous side effects and problems.

It's all changed now.

Today, most (not all) hormone therapy is low-dose bioidentical estradiol, which is a lot safer than Premarin .

For vaginal atrophy symptoms, I recommend the estradiol vaginal pessary Vagifem . It relieves dryness, and it can ease other menopausal symptoms such as insomnia. Because it's such a low dose, you can use Vagifem on its own, without progesterone.

For severe hot flashes and menopausal insomnia, I recommend an estradiol patch such as Estradot or Climara . If you take an estradiol patch, you'll also need progesterone. That's true even if you don't have a uterus.

Special Topic: Why Your Doctor Says You Don't Need Progesterone If You Don't Have a Uterus

Conventional medicine does not recognize any of the many benefits of natural progesterone. In conventional thinking, the only purpose of a progestin is to prevent the unwanted buildup of the uterine lining. That's true for synthetic progestins because they have no additional benefits. Progesterone is different. It protects the uterine lining *and* is beneficial for mood, bones, brain, and thyroid. It may even prevent breast cancer.

DHEA (dehydroepiandrosterone)

DHEA is a hormone you make from your ovaries and adrenal glands. You can also take it as a capsule or cream.

In this chapter, I mentioned DHEA as a fertility enhancer as well as a possible treatment for vaginal atrophy and osteoporosis [\[403\]](#). A suitable dose for women is 5 to 10 mg. Please speak to your doctor.

In summary, natural progesterone and other bioidentical hormones are treatment options for perimenopause and beyond. Some bioidentical

products are available without a prescription in the USA, but they require a prescription in other countries.

Bioidentical hormones cannot be used to prevent pregnancy.

A Final Word About Life After Periods

Because our society values young women of reproductive age, some of us entering menopause can feel a loss of power and worth.

It doesn't have to be that way. As I approach menopause myself, I am waking up to a new kind of power—one of wisdom and a strong desire to help others. I also feel a camaraderie with other older women. By the year 2030, there will be 1.2 billion postmenopausal women in the world [\[404\]](#)—more than ever before.

Surely, we can be a force for good.

Chapter 11



Advanced Troubleshooting

Putting It All Together

Time for a review.

What should your period be like? Your period should be regular. It should arrive without premenstrual symptoms and without pain. It should not be heavier than 80 mL (16 filled tampons) over all the days of your bleed.

You have the right to this kind of ease with your periods. No pain. No flooding. No PMS. It *is* possible.

Your period is your monthly report card. Your symptoms are your clues.

What are *your* clues? What are they trying to tell you about your underlying health?

When interpreting your period clues, please always come back to these three questions:

1. Do you ovulate regularly? If you *do not* ovulate, then why not?
2. Do you metabolize or detoxify estrogen well? If not, why not? And what can you do to improve that?
3. Do you suffer chronic inflammation that is interfering with your hormonal communication? What can you do to reduce inflammation?

These are the questions to ask yourself. They're not the questions to ask your doctor because she may not be familiar with concepts such as estrogen metabolism and chronic inflammation. I'll provide a list of doctor-speak questions later in this chapter.

Do You Ovulate?

We have asked this question again and again throughout the book. Ovulation is essential for period health because it's how you make progesterone.

Failure to ovulate and make progesterone is the main reason for many period problems, including irregular periods, polycystic ovarian syndrome (PCOS), and heavy periods.

How do you know if you ovulate and make progesterone?

Signs of *possible* ovulation include fertile mucus and a regular cycle. Evidence of *definite* ovulation includes a rise in basal body temperature and an increase in progesterone as measured by a mid-luteal phase blood test. A period itself is not a definite sign of ovulation because it is possible to have an anovulatory cycle. For more information, please see the [Physical Signs of Ovulation](#) section in Chapter 3 and [Progesterone Testing](#) in Chapter 5.

Why do you not ovulate?

Here are some possibilities:

- Polycystic ovarian syndrome (PCOS)
- Insulin resistance
- Deficiency of zinc, selenium, iodine, or vitamin D
- Undereating
- Low-carb diet
- Too many phytoestrogens, such as soy
- Stress
- Elevated prolactin
- Perimenopause
- Celiac disease
- Thyroid disease (see below)

That is not an exhaustive list, but it's a good starting place. It should help you to ask your doctor more targeted questions (see the doctor-speak section below).

Once you have identified *why* you do not ovulate, your best treatment is to correct *that* issue. We explored a variety of treatments in Chapter 7.

Do You Metabolize Estrogen Well?

Estrogen excess is a key factor in PMS, fibroids, and heavy periods.

How do you know if you have estrogen excess?

Look for symptoms such as premenstrual irritability, breast tenderness, heavy periods, and fibroids. Ask your doctor to test estrogen with a blood test in your luteal phase when both estrogen and progesterone are high.

Why do you not metabolize estrogen well?

Common reasons for impaired estrogen metabolism or detoxification include:

- Alcohol
- Digestive problems
- Environmental toxins
- Nutrient deficiency
- Chronic inflammation

For a full discussion, please see the [Estrogen Excess](#) section in Chapter 5.

Do You Suffer Chronic Inflammation?

In many sections of this book, we saw how inflammation distorts hormonal communication. For example, chronic inflammation blocks hormone receptors. It also impairs estrogen metabolism and prevents ovulation and the production of progesterone.



Inflammation could be the main reason you have period problems.

How do you know if you have chronic inflammation?

Look for signs and symptoms of inflammation. For example, do you suffer headaches, joint pain, or chronic skin conditions such as eczema and psoriasis? Those are your clues.

Fatigue is another symptom of inflammation, but be careful interpreting that one. Fatigue has many different causes. If you suffer fatigue, please ask your doctor to test you for iron deficiency and thyroid disease. Please consider whether you get enough sleep. Once you have ruled out these possibilities, then fatigue could be the period clue you're looking for. It could be a sign of chronic inflammation.

There's no simple blood test for inflammation. Your doctor can test for inflammatory markers such as CRP, ESR, thyroid antibodies, and gluten antibodies. But you could have chronic inflammation *even if those tests are normal*.

Inflammation is often the result of stress, insulin resistance, environmental toxins, and digestive problems. Your strategy is to address those underlying problems.

Environmental Toxins

I wish I didn't have to include this section. It makes me sad just to think about it. Still, it must be faced: Environmental toxins can play a significant role in period problems.

Environmental Working Group

The best resource for information about environmental toxins is the nonprofit organization Environmental Working Group (<http://www.ewg.org/>). They have been working in this field for over two decades and provide regular updates about the environmental toxins in our food, cosmetics, and household products. They also publish new research.

Toxic at Low Dose

We used to think that environmental toxins had to be high dose to cause a problem (high enough dose to kill a mouse in a lab study). We now know that environmental toxins can be a problem at a frighteningly low dose. Why? Because many environmental toxins are *endocrine disruptors* or *endocrine-disrupting chemicals* (EDCs).



endocrine disrupting chemicals

Endocrine disrupting chemicals (EDCs) are substances that cause adverse health effects by altering the function of the endocrine or hormonal system. They include pesticides, metals, industrial pollutants, solvents, food additives, and personal care products.

Your body is *accustomed* to responding to hormones at a low dose. Therefore, it makes sense that your body will respond to endocrine disruptors at a low dose. Even at a few parts per million, environmental toxins can disrupt your hormonal system. For example, they can stimulate

more of certain hormones and less of others. They can directly damage glandular tissue such as thyroid and ovaries. Finally, they can impair estrogen metabolism and block and disrupt hormone receptors.

Not all environmental toxins are hormone disruptors, but many are.

Dirty Dozen Endocrine Disruptors

According to a 2013 EWG report, the most concerning endocrine disrupting chemicals (EDCs) are the following:

BPA (bisphenol A) is used to make some types of plastic. It mimics estrogens and disrupts estrogen metabolism. Other bisphenols (such as bisphenol S) may be just as harmful.

Dioxins are an industrial byproduct and accumulate in animal foods like meat, fish, milk, eggs, and butter. They interfere with hormonal signaling and are implicated in the causation of endometriosis [\[405\]](#). They can also have a devastating effect on sperm.

Atrazine is a widely used herbicide. It's been linked to reproductive cancers.

Phthalates are used in the manufacture of plastic, food containers, shampoos, and other household products. They disrupt many hormones including thyroid. A recent study linked phthalate exposure to underactive thyroid in young girls [\[406\]](#).

Perchlorate is a component of rocket fuel that ends up in food and drinking water. It disrupts thyroid function.

Fire retardants are applied to furniture, mattresses, and carpets. They disrupt thyroid function.

Lead is a powerful nerve toxin, but it also lowers sex hormones and disrupts the HPA axis or stress response.

Arsenic is a breakdown product of some pesticides and also occurs naturally in some soils. It ends up in drinking water and rice and can cause acne and insulin resistance.

Mercury is a powerful nerve toxin. It also directly alters levels of FSH, LH, estrogen, progesterone, androgens, and thyroid hormone [\[407\]](#). It's the ultimate endocrine disruptor. (See the mercury section below).

Perfluorinated chemicals (PFCs) are used to make non-stick cookware and water-resistant clothing. They appear to be "completely resistant to

biodegradation” which means they never break down. They alter levels of thyroid and sex hormones.

Organophosphate pesticides are the most common type of pesticide. They affect thyroid and sex hormones.

Glycol ethers are in common solvents in paints, cleaning products, cosmetics. They may damage fertility.

Adapted from: <http://www.ewg.org/research/dirty-dozen-list-endocrine-disruptors>

Period Problems

Can all of those hormone-disrupting effects actually contribute to period problems? They can.

Research has linked bisphenol A (BPA), phthalates, and mercury to polycystic ovarian syndrome (PCOS) [408] [409], and dioxins, phthalates, and PCBs to endometriosis. Phthalates, pesticides, and dioxins have also been demonstrated to advance the onset of menopause by up to four years [410].

Experts are concerned. In 2013, two major medical organizations raised a cautious alarm. Together, the American College of Obstetricians and Gynecologists (ACOG) and the American Society for Reproductive Medicine (ASRM) stated:

“Scientific evidence over the last 15 years shows that exposure to toxic environmental agents...can have significant and long-lasting effects on reproductive health.” [411]

Then just over a year later, based on a review of more than 1300 studies, the Endocrine Society stated that *it’s time for doctors to start talking to their patients about endocrine disrupting chemicals* [412].

The Endocrine Society stopped short of advising individuals to take specific measures to protect themselves. They say the onus is on government and industry to reduce pollutants and protect the public. I wholeheartedly agree that industry should make changes to protect us. Hopefully, that will improve the health of future generations. In the meantime, what can you do to help yourself now?

Diagnosis of Exposure to Environmental Toxins

If you live in the modern world, you have environmental toxins in your body. All of us do. But that doesn't necessarily mean they are the biggest cause of your period problems. For example, if you have insulin-resistant PCOS, then sugar is more likely to be the thing you need to change.

But if you think that environmental toxins are affecting you, then here are some things to consider.

Consider your exposure

Do you work in a setting such as a hair salon, craft studio, or dentist's office where you regularly breathe chemical fumes? Do you live near a golf course, or in an agricultural area where you're exposed to pesticides? Finally, do you eat a lot of tuna, which contains mercury?

These are just a few examples where you might have higher than average exposure.

Consider your symptoms

Do you have unexplained fatigue, headaches, anxiety, or joint pain? Those could be signs of exposure to environmental toxins.

Look at your standard blood test

Your doctor probably ordered something called a complete blood cell count and liver function test. Take a closer look. Do you have a high number of white blood cells that cannot be explained by an infection or other condition? That could be a sign of exposure to pesticides. Do you have low platelets? That could be a sign of exposure to mercury.



platelets

Platelets are blood cells whose function is to stop bleeding.

Also, look at your liver function panel, and in particular, at something called GGT (gamma-glutamyl transpeptidase). Your GGT should be less than 30 IU/L. If it is higher than that, then it means you are burning through

your glutathione, which is your body's primary antioxidant and detoxifying molecule. High GGT means you've been exposed to some kind of toxin, such as alcohol or an environmental toxin.

Testing for Environmental Toxins

Toxic metals

You can ask your doctor to assess mercury, lead, and cadmium with a blood test. When interpreting your result, ignore the reference range. Its purpose is to assess *industrial exposure*, but you are an individual in a non-industrial setting, so you should come back with essentially no mercury, cadmium, or lead. If you show a reading, then you could have a problem with toxic metals.

Unfortunately, a negative blood test is not a guarantee that metals are not a problem. A blood test can only detect toxic metals that are floating freely in your blood that day. It cannot detect metals sequestered in your organs, brain, and bones, as they commonly are.

Some doctors do a "challenge test" for mercury by first injecting a substance to liberate it from storage and then testing your urine. I recommend against a challenge test because it can expose you to a lot of mercury all at once. I hope the future will bring better, more reliable, and safer methods of metal testing.

Plastics, pesticides, and other toxins

Some doctors test for plastics, pesticides, PCBs, and flame retardants. Such a test might be helpful if it alerts you to a source of exposure of which you were not aware. But if you already *know* you have toxic exposure, then you won't gain much from knowing your exact level.

For all kinds of toxins, it's simpler to just proceed with a gentle detoxification lifestyle such as the one described below. That's what I recommend for my own patients.

Minimize Your Exposure

We are all exposed to toxins, so we all have to make the best of a bad situation. Until our governments legislate tougher restrictions, we can only minimize our individual exposure. We cannot completely avoid toxins.

With that in mind, please make sensible, obvious choices *when you can*. For example, please choose organic if you can afford it. If you cannot afford it, then it's okay. You do not need to fear non-organic food. It's better to eat *non-organic vegetables* than to eat no vegetables at all.

Plastics, solvents, pesticides

Please avoid the toxic chemicals used in farming, gardening, and building materials. For example, please say no to unnecessary home products such as air fresheners, dryer sheets, and chemical carpet cleaners. And if you can, please use an activated carbon water filter to remove pesticides from your drinking water—especially if you live in a rural, agricultural area.

Please choose cosmetics and body products that do not include phthalates, arsenic, or other toxins (see the Environmental Working Group website for more information). And always wash your hands after handling cash register receipts because they're high in bisphenol A.

Mercury

Mercury comes from fish and dental amalgams.

Reduce your intake of large fish. The mercury in fish ultimately comes from the pollution from coal-fired power plants throughout the world. Mercury enters the air and then falls into the water. There, bacteria convert mercury to methylmercury, which enters the fish's food supply. Little fish eat mercury, then bigger fish eat the little fish. That's how mercury becomes more and more concentrated as it goes up the food chain. And that's why big fish such as tuna, swordfish, and marlin have the most mercury. Small fish such as salmon, oysters, sardines, flounder, squid, anchovies, and herring have the *least* mercury. Small fish are a healthy food.

Consider having your amalgam fillings removed. You do not necessarily have to remove every amalgam. It's only something to think about if you have more than two amalgams and if your health problems are not improving with other treatments. The removal of amalgams is best done by a dentist who understands the correct protocol. Done incorrectly, amalgam removal can expose you to more mercury than if you just left them in your mouth.

Pesticides on food

Foods with the highest pesticide residues include animal fat, grains, and certain types of fresh produce.

Every year, the Environmental Working Group publishes a list of the produce with the highest level of contamination.

Diet and Lifestyle to Support Detoxification

Your body is made to detoxify. Detoxification is the biggest and most energy-consuming activity your cells undertake, and they do it *every minute of every day*.

How can you support healthy detoxification on an ongoing basis?

- **Maintain healthy gut bacteria** because they play a key role in escorting toxins out of your body. See the Digestive Health section below.
- **Avoid food sensitivities** like gluten and cow dairy. They create inflammation in the gut, which can impair healthy detoxification.
- **Reduce or eliminate alcohol** to maintain a healthy liver. Remember, your liver is your primary detoxification center.
- **Get enough sleep**, because deep sleep is when you recycle glutathione to its active form.
- **Sweat** in the sauna or during exercise to mobilize and eliminate stored toxins. Please be sure to drink plenty of filtered water to dilute the toxins.

Supplements and Herbal Medicines to Aid Detoxification

Support glutathione

The best supplements for detoxification are those that support the production of glutathione. We met [glutathione](#) in Chapter 6. It's your body's master antioxidant and detoxifying molecule. It also regulates your immune system and reduces inflammation. The more glutathione you have, the healthier you will be and the better equipped to detoxify mercury, pesticides, and other toxins.

The best supplements to boost glutathione are:

Liposomal glutathione, which is an absorbable preparation of glutathione itself.

What else you need to know: I recommend 100 to 400 mg per day.

Milk thistle (silymarin) is an herbal medicine traditionally used for liver health.

How it works: It boosts glutathione and protects liver cells from toxic damage.

What else you need to know: The exact quantity of the herb depends on the concentration in the formula, so please use as directed on the bottle.

Turmeric or **curcumin**. I've already recommended turmeric for its anti-inflammatory properties, and its effectiveness for heavy periods and endometriosis (Chapter 9). We now come to its hidden power. It also boosts glutathione [\[413\]](#).

How it works: It reduces inflammation, boosts glutathione, and protects liver cells from toxic damage.

What else you need to know: Turmeric is better absorbed when taken directly after a meal.

N-acetyl cysteine (NAC) is one of my favorite supplements for detoxification. We've already looked at it as a treatment for inflammatory PCOS and endometriosis.

How it works: It boosts glutathione and also binds to mercury to draw it out your body.

What else you need to know: NAC has the nice side benefit of reducing anxiety. Too much NAC can thin your stomach lining so please do not take if you have gastritis or stomach ulcers. I recommend 500 to 2000 mg per day.

Alpha-lipoic acid is helpful for detoxification. We also saw it as a treatment for insulin-resistant PCOS in Chapter 7.

How it works: It improves insulin sensitivity and boosts glutathione.

What else you need to know: Alpha-lipoic acid is safe, but doses greater than 1000 mg can decrease thyroid hormone. I recommend 300 to 600 mg per day with food.

Selenium is an important anti-inflammatory and detoxifying mineral. We've already seen it a few times for PMS, ovarian cysts, endometriosis.

How it works: It boosts glutathione.

What else you need to know: I recommend 100 to 150 mcg per day.

Selenium can be toxic in high amounts, so please do not exceed 200 mcg

per day from all sources including high-selenium foods such as Brazil nuts.

Magnesium aids with detoxification.

How it works: It supports detoxification pathways through your liver and kidneys. It also actively pushes out toxic metals such as lead and cadmium. See previous magnesium sections for dosing instructions.

Digestive Health

You cannot have healthy periods until you have a healthy digestive system. It is that simple.

This section is an overview of the main issues you should consider when it comes to digestive health.

Gut Microbiome

When you have friendly gut bacteria or a friendly *gut microbiome*, they do many good things for your hormonal health. For example, they regulate your HPA axis, activate thyroid hormone, reduce inflammation, and metabolize or detoxify estrogen.

When you have unfriendly bacteria or an unfriendly microbiome, then you have a condition called *dysbiosis*, which means an unhealthy change to your normal bacterial ecology. Dysbiosis can disrupt your HPA axis, interfere with thyroid hormone, and impair estrogen metabolism.

Dysbiosis is a common reason for many period problems. It can also affect your *vaginal* microbiome, which we'll see later in the chapter.

Fortunately, there are many things you can do to improve your gut health.

How to maintain a healthy gut microbiome

1. **Avoid, as much as possible, drugs that damage gut bacteria.** That includes hormonal birth control, stomach acid medication, and *antibiotics*. I cannot emphasize this enough. Please see Kate's patient story below.
2. **Avoid concentrated sugar** because it feeds unfriendly bacteria.
3. **Eat vegetables and healthy starches** because they feed friendly bacteria.
4. **Reduce alcohol** because alcohol causes dysbiosis.

5. **Get enough sleep** because sleep deprivation causes dysbiosis.
6. **Reduce stress** because stress causes dysbiosis.
7. **Eat fermented foods** such as natural yogurt and sauerkraut because they support friendly bacteria.
8. **Ensure adequate stomach acid** because you need stomach acid to kill unfriendly bacteria and also to digest protein. If you experience digestive bloating and heartburn, then you may have *low stomach acid*. You can consider taking a digestive enzyme such as betaine hydrochloride.
9. **Consider supplementing a probiotic** which is a capsule containing live bacteria or yeast.



Kate: Recurrent chest infections and antibiotics

Kate came to me for help with fatigue, PMS, and chronic yeast infections.

“The yeast infections are from antibiotics,” she told me. “I have to take them every few months for bronchitis.”

Me: “Every few months!”

Kate: “Yes, my doctor says I need them because one time my chest got so bad, it turned into pneumonia. I don’t want that to happen again, so I take the antibiotics. But I always take a probiotic after.”

“A probiotic can help,” I said. “But it isn’t enough. It can’t replace the species of good bacteria you lose every time you take antibiotics.”

I then went on to explain how *dysbiosis* (a problem with her gut bacteria) could be contributing to her fatigue and PMS.

“Dysbiosis impairs your ability to metabolize and detoxify estrogen,” I said. “That means you end up having *too much estrogen*. Dysbiosis also generates a lot of inflammation, which can interfere with progesterone and other hormones.”

“Is there a better probiotic I could take?” Kate asked.

“I have a better plan,” I said. “Let’s find a way for you to *not* need the antibiotics.”

Kate had never considered that as a possibility.

I suggested we work on her *immune system* to prevent the future use of antibiotics and therefore give her gut microbiome a chance to recover.

“I consider immune treatment to be the *key part of your hormonal treatment*,” I said.

I asked Kate to stop having normal cow’s milk because I felt it was disrupting her immune function and putting her at risk of chest infections. I prescribed zinc, vitamin D, and a medicinal mushroom extract to improve her immunity. I also prescribed a probiotic with the strains *Lactobacillus rhamnosus* (LGG®) and *Lactobacillus plantarum* (HEAL 9), which have been clinically demonstrated to support immunity and reduce the severity of acute viral infections [\[414\]](#).

Kate did get one more mild chest infection but managed to avoid antibiotics. By the time we met six months later, she’d had no more chest infections. Her energy and her PMS were also improved.

Kate stopped the mushroom extract and the probiotic but continued the zinc, vitamin D, and dairy-free diet as ongoing immune support.



Antibiotics are amazing life-saving drugs. But if you’re healthy, you should not expect to need them more than three or four times in a *lifetime*.

As you can see, I did prescribe a probiotic for Kate, but I chose one with the particular purpose of enhancing her immunity so she could avoid future antibiotics. Later in the chapter, I’ll refer to other specific strains of probiotic bacteria that are helpful for intestinal permeability and the vaginal microbiome.

At this stage in my clinical practice, I am leaning more and more toward choosing a probiotic that contains a strain, or strains, of microorganisms that have been clinically trialed for a particular purpose. Gone are the days of the shotgun multi-strain probiotic.

How to choose a probiotic

Our understanding of the gut microbiome is still in its infancy.

At this stage, we know that *certain strains* of probiotics work for *certain conditions*, but we *cannot* say there is one best probiotic that works for everyone. And research is moving so quickly that we’re likely to see

countless new strains of probiotics in the coming years. My selection of the best probiotic changes every few months.

Here are some things to understand:

- Probiotic species **do not** colonize your gut. In other words, they do not become established as permanent residents in your intestine. Instead, they exert beneficial effects on your gut and immune system as they *pass through*.
- Clinical benefits have been demonstrated for specific *strains* (or subtypes) of bacteria. You may not get the same benefit from another strain of the same species.
- Different probiotic strains work for different conditions. For example, the species *Saccharomyces boulardii* can combat gut pathogens such as yeast and parasites. The strains *Lactobacillus rhamnosus*, GR-1 and *Lactobacillus reuteri*, RC-14 can normalize vaginal microbiome and relieve yeast infections (see below).
- It's better to choose a product with many individual bacteria but *fewer* strains or types of bacteria. That way, the strain can have a more targeted effect.
- Probiotics may work better in combination with a prebiotic or fiber supplement. Such products are called *synbiotics*.
- Diet has a more powerful effect on the microbiome than any probiotic.
- If you experience digestive bloating from a probiotic, then you may have a condition called small intestinal bacterial overgrowth (see below). With SIBO, you may benefit more from an herbal antimicrobial.

Intestinal Permeability

I referred to intestinal permeability when we discussed food sensitivities in Chapter 6 and endometriosis in Chapter 9. It's an important topic because it's a common cause of inflammation.

Intestinal permeability is a condition in which tiny microscopic gaps or leaks form between the cells of your intestinal wall. Normally, your intestinal cells should be tightly joined to create a barrier to prevent bacteria and proteins from entering your body. Intestinal permeability occurs when

that barrier is breached by infection, antibiotics, hormonal birth control, small intestinal bacterial overgrowth (SIBO), or inflammatory foods such as gluten.

When you develop intestinal permeability, food proteins and bacterial toxins enter your body and can stimulate your immune system to make inflammatory cytokines.

How to treat intestinal permeability

- Avoid gluten, because gluten can cause intestinal permeability.
- Improve the health of your gut microbiome (see above) and treat SIBO (see below).
- Supplement with the herbal medicine berberine (see the IBS and SIBO section below).
- Supplement zinc, because it repairs the integrity of the intestinal barrier [\[415\]](#).
- Supplement with probiotics such as *Lactobacillus rhamnosus* GG and *Lactobacillus plantarum* MB452, because they can repair the integrity of the intestinal barrier [\[416\]](#) [\[417\]](#).

Inflammatory Bowel Disease (IBD)

The most serious digestive problem is inflammatory bowel disease which includes Crohn's disease, ulcerative colitis, and celiac disease. Treatment of inflammatory bowel disease is beyond the scope of this book. Please seek professional advice.

Irritable Bowel Syndrome (IBS) and Small Intestinal Bacterial Overgrowth (SIBO)

A less serious digestive problem is irritable bowel syndrome (IBS), which causes pain, bloating, diarrhea, and constipation. IBS is usually the result of something called small intestinal bacterial overgrowth (SIBO), which is the *overgrowth of normal bacteria in your small intestine*.

Your gut bacteria are supposed to live lower down in your *large* intestine. Various perturbations can cause them to move up into your small intestine,

resulting in SIBO. Common perturbations include infection, antibiotics, stomach acid drugs, thyroid disease [\[418\]](#), and the oral contraceptive pill.

Once bacteria move up into your small intestine, they cause IBS, intestinal permeability, and inflammation. That inflammation could then cause or worsen your period problems.

Natural treatment of IBS and SIBO

Low FODMAP diet. As we saw in Chapter 6, FODMAPs are fermentable carbohydrates. Bacteria ferment FODMAPs, which is fine when bacteria are where they're supposed to be in your large intestine. When bacteria are in your small intestine (SIBO), the fermentation of FODMAPs can cause bloating and inflammation.

A low-FODMAP diet can give short-term relief, but it's **not** a long-term solution for IBS. For one thing, a low-FODMAP diet is restrictive and may cause you to undereat. Also, a low-FODMAP diet starves the bacteria in your large intestine of the fiber they need to keep you healthy.

A better plan is to *treat SIBO* with an herbal antimicrobial.

Herbal antimicrobials such as berberine can be very helpful for SIBO and IBS.

How it works: Berberine is antimicrobial and reduces the overgrowth of bacteria in your small intestine. It also repairs intestinal permeability [\[419\]](#). A John Hopkins study found that a supplement containing berberine and other antimicrobial herbs is as effective as antibiotics for treating SIBO [\[420\]](#).

What else you need to know: I usually prescribe an eight-week course of berberine in combination with other herbal antimicrobials, such as oregano oil. I sometimes use the products used in the John Hopkins study, which are Metagenics Candibactin-AR and Candibactin-BR. I also use Thorne Research Berberine-500. Please do not take berberine for more than eight weeks continuously except under professional advice. See the berberine section in Chapter 7 for further precautions and dosing instructions.

Sometimes one course of treatment with an antimicrobial is enough. But sometimes SIBO recurs and require repeat treatment.

How to prevent SIBO recurrence

- Avoid inflammatory foods such as wheat and dairy, because they create inflammation which can impair bowel motility.
- Identify and treat an underlying thyroid problem, because underactive thyroid can cause SIBO.
- Avoid as much as possible drugs that cause SIBO. They include antibiotics, stomach acid medication, and the oral contraceptive pill.
- Consider taking digestive enzymes such as betaine HCL (hydrochloric acid), because they promote bowel motility.
- Consider taking milk thistle, because it promotes bowel motility.



Some probiotics can *worsen* the digestive bloating associated with SIBO.

Digestive health is a complex topic. A full discussion is beyond the scope of this book. If your symptoms do not improve, then please seek professional advice.

Yeast Infections and Bacterial Vaginosis

As we saw in Chapter 5, both yeast infections and bacterial vaginosis are caused by a disrupted *vaginal* microbiome. That means, ultimately, that they're caused by a disrupted *gut* microbiome. The two populations of bacteria are connected. Think of it as your *whole-body ecosystem*.

The best way to treat yeast infections and vaginosis is to do all the things described above to maintain a healthy gut microbiome *plus* these three additional recommendations for vaginal microbiome:

1. Supplement with the probiotic strains *Lactobacillus rhamnosus*, GR-1 and *Lactobacillus reuteri*, RC-14 which have been clinically proven to improve yeast and bacterial vaginosis [\[421\]](#). The probiotic combination works best when taken orally, but you can also insert it vaginally for additional benefit.
2. Do not use a feminine wash or douche, because it depletes your friendly vaginal bacteria.

3. Do not use spermicide, because it depletes your friendly vaginal bacteria.

Thyroid Disease

Looking back, I can see that I mentioned thyroid disease in almost every chapter in the book. You will not be surprised when I say that thyroid health is a major factor in period health.

Your thyroid is a butterfly-shaped gland in the front of your throat. It manufactures thyroid hormone, which is a small protein hormone made from tyrosine and iodine. Thyroid hormone is the ignition switch for each and every cell. It stimulates the burning of calories and the manufacture of proteins.

Thyroid hormone is essential for all metabolic activity, including healthy digestion, detoxification, and ovulation.

How Thyroid Disease Causes Period Problems

The most common type of thyroid disorder is hypothyroidism (underactive thyroid), which occurs when the thyroid does not make enough hormone. Hyperthyroidism (overactive thyroid) can also affect periods, but it is less common.

Hypothyroidism interferes with period health in the following ways:

- It stimulates prolactin which suppresses ovulation (Chapter 7).
- It worsens insulin resistance and increases your risk of PCOS (Chapter 7).
- It impairs the healthy metabolism of estrogen, and so causes estrogen excess.
- It robs your ovaries of the cellular energy they need to ovulate and so causes anovulation and low progesterone.
- It decreases coagulation factors, and so causes heavy bleeding (Chapter 9).

Hypothyroidism affects at least one in ten women (and some men). It is often overlooked because it's difficult to detect with a standard blood test.

Diagnosis

The standard test for thyroid disease is a blood test for thyroid-stimulating hormone (TSH).

When your thyroid gland is making enough thyroid hormone, it signals your pituitary to make *less* TSH.

When your thyroid gland is *not* making enough thyroid hormone, it signals your pituitary to make *more* TSH.

Therefore, insufficient thyroid hormone causes a *high TSH* reading on a blood test. High TSH means you have underactive thyroid or hypothyroidism.

TSH controversy

There is some debate about what should be considered “high” TSH. Under current guidelines, your doctor cannot diagnose underactive thyroid until your TSH is greater than 5 or 6 mIU/L. In other words, until your TSH is greater than 5 mIU/L, you are considered to have *normal* thyroid function.

Fifteen years ago, the American National Academy of Clinical Biochemistry dropped the upper limit of TSH to 2.5 mIU/L, and the American Association of Clinical Endocrinologists (AACE) quickly followed suit [\[422\]](#). Under those proposed guidelines, your doctor could diagnose underactive thyroid when your TSH was only 2.5 mIU/L. It was a bit of a game-changer because, suddenly, tens of thousands of people with a borderline thyroid problem could be treated.

That could have been particularly important for women because research shows that women have better outcomes with fertility and pregnancy when their TSH is *less* than 2.5 mIU/L [\[423\]](#).

Unfortunately, the new 2.5 TSH guideline was not widely adopted by labs or doctors, and so most doctors today still adhere to the old 5 mIU/L cutoff. It means that doctors today are missing opportunities to treat thyroid disease and help women with period and fertility problems.

With my patients, I suspect thyroid disease if TSH reading is consistently greater than 3 mIU/L.

There's another problem

If your TSH is less than 3 mIU/L, then it should mean you have normal function. It *should* mean that, but unfortunately, TSH can be artificially suppressed by many things including stress and chronic inflammation. In other words, you could have a normal TSH but still be suffering underactive thyroid.

You need to consider symptoms.

Thyroid symptoms

The most common symptoms of underactive thyroid include:

- Fatigue
- Irregular periods
- Heavy periods
- Infertility
- Hair loss
- Dry skin
- Cracked heels
- Fluid retention
- High cholesterol on blood test
- Feeling cold all the time
- Digestive problems including SIBO
- Brain fog
- Depression



Up to 20 percent of depression may be due to an undiagnosed problem with thyroid.

Of course, many of those symptoms can have *other* causes. If you suspect thyroid disease, then please ask for another blood test called thyroid antibodies.

Thyroid antibodies

Thyroid antibodies are an autoimmune response against your thyroid gland. It's a type of inflammation and is one of the best tests for identifying a thyroid problem.

If you test positive for thyroid antibodies, you may have an autoimmune disease called Hashimoto's thyroid disease, which accounts for 90 percent of hypothyroidism in Western countries.

Hashimoto's thyroid disease runs in families, so you are more likely to suffer it if your mother or sister had it.

Conventional Treatment of Thyroid Disease

Thyroid hormone

The conventional treatment of thyroid disease is to give thyroid hormone usually in the form of thyroxine or *T4 hormone*. Thyroxine works well to return TSH to the normal range, but it may not make you feel much better. Up to 10 percent of thyroid patients continue to have symptoms on thyroxine, even when their TSH is normal [\[424\]](#). If that's happening to you, ask your doctor for a combination of T4 and *T3 hormone*. T3 is the active form of thyroid hormone, and there's growing evidence it's better for symptoms [\[425\]](#). More and more doctors are willing to prescribe it.

Desiccated thyroid gland (from a pig) is another popular type of thyroid hormone supplement. It naturally contains both T4 and T3. A 2013 clinical study found that desiccated thyroid is safe and preferred by the majority of patients [\[426\]](#).

I consider thyroid hormone (even thyroxine) to be a natural and highly beneficial treatment. If you require it, I encourage you to take it. You can also implement some of the natural thyroid treatments described below.

All thyroid hormone (including desiccated thyroid) must be prescribed by your doctor.

Diet and Lifestyle for Thyroid Disease

Avoid gluten

The best natural treatment for thyroid disease is to reduce autoimmunity by avoiding inflammatory foods, especially gluten. A wheat-free diet has been shown to reduce thyroid antibodies and improve thyroid function [\[427\]](#).

Correct intestinal permeability

By exposing your immune system to bacterial toxins and other proteins, intestinal permeability can cause or worsen autoimmune thyroid disease.

Please refer to the Intestinal Permeability section earlier in the chapter.

Identify and treat the Epstein-Barr virus

Infection may play a role in autoimmune thyroid disease. For example, the Epstein-Barr virus has been identified as a possible cause of Hashimoto's disease [\[428\]](#). Epstein-Barr virus is common, and most of us have had a prior infection that went dormant. When the virus reactivates, it can trigger or worsen thyroid disease. The best treatment is to support the immune system with natural anti-viral treatments such as zinc, selenium, vitamin D, and medicinal mushroom extract.

Supplements and Herbal Medicine for Thyroid Disease

Ashwagandha (*Withania somnifera*). We met this herbal medicine as a treatment for hypothalamic amenorrhea in Chapter 7 and perimenopause in Chapter 10. It also helps thyroid.

How it works: Ashwagandha stimulates the healthy production of thyroid hormone [\[429\]](#). It also reduces inflammation and stabilizes the HPA axis or stress response system.

What else you need to know: The exact quantity of the medicine depends on the concentration of the formula. Doses range from 300 to 3000 mg and may be taken in a formula that contains other adaptogens such as *Rhodiola*. Ashwagandha is a safe herb and works best when taken for at least three months or longer.

Selenium is a key nutrient for thyroid.

How it works: It reduces inflammation and thyroid antibodies [\[430\]](#) [\[431\]](#). It also aids with the activation of T4 to T3 and can protect your thyroid from iodine.

What else you need to know: I recommend 100 to 150 mcg per day. Selenium can be toxic in high amounts, so please do not exceed 200 mcg per day from all sources including high-selenium foods such as Brazil nuts.

Iodine is controversial for thyroid disease. Your thyroid needs iodine, and iodine deficiency is the primary cause of thyroid disease in some parts of the world. Iodine is not the primary cause of thyroid disease in Western countries, autoimmunity is. Unfortunately, too much iodine can cause or

worsen thyroid autoimmunity. That is less likely if you have adequate selenium.

If you do **not** have thyroid antibodies, you can take iodine, and it may help your thyroid function. Please refer to the Iodine section in Chapter 6 for safe dosing instructions.

If you **do** have thyroid antibodies, you should probably not take iodine for your thyroid. That said, you can take a *small amount* of iodine for its other benefits—namely, the down-regulation of estrogen receptors as discussed throughout the book.

How it works: Iodine is an essential part of thyroid hormone.

What else you need to know: Do not exceed 500 mcg (0.5 mg) except under professional advice.

Thyroid disease is a complex topic. A full discussion is beyond the scope of this book. Please seek professional advice.

Hair Loss

Find the cause

Hair loss can be caused any of the following:

- Childbirth
- Illness
- Undereating
- Low-carb diet
- Celiac disease or gluten sensitivity
- Stress
- Thyroid disease
- Iron deficiency
- Zinc deficiency
- Protein deficiency
- Hormonal birth control
- Stopping hormonal birth control
- Antidepressant medication
- PCOS or androgen excess

Your only hope is to identify the cause and correct *that*. For example, if you have iron deficiency, then please take iron. If you have PCOS, then

please treat PCOS.

When considering the cause of your hair loss, keep in mind that the cause comes first and then the hair loss about three months *later*. With my own patients, I often draw out a timeline to figure out what is going on. See the Time Lag section below.

Depending on the cause and type of hair loss, your doctor will diagnose you with either *telogen effluvium* or *androgenetic alopecia*, or a *combination of the two*. According to the American Hair Loss Association, the early stages of androgenetic alopecia are effectively telogen effluvium [\[432\]](#).

Telogen effluvium essentially means “hair falling out” due to *something*. That *something* is one of the things listed above such as after childbirth (postpartum), stress, illness, dieting, or stopping birth control. That *something* could also be exposure to androgens or male hormones, in which case telogen effluvium will develop into androgenetic alopecia.

Androgenetic alopecia (female pattern hair loss) is progressive hair loss caused by male hormones or a *sensitivity* to male hormones. It causes a widening of the part and a diffuse thinning and miniaturization of the hair follicles. It can go on for years and is not easy to reverse.

We discussed androgenetic alopecia in two places in the book. First, in Chapter 2 where we saw that hormonal birth control with a “high androgen index” causes androgenetic alopecia. And then again in the [Female Pattern Hair Loss](#) treatment section in Chapter 7.

I know from my conversations with many patients that hair loss is distressing. It’s distressing because it takes a long time to improve, and also because it’s not helped much by conventional treatments.

Conventional Treatment of Hair Loss

Hormonal birth control

Progestins with a “low androgen index” (see Chapter 2) can, in theory, be helpful because they block androgens. Unfortunately, my experience is that they don’t work all that well, probably because they suppress progesterone. Remember, progesterone is great for hair!

Spironolactone (Aldactone)

We met this androgen-suppressing drug as a treatment for PCOS in Chapter 7. It's almost same drug as the progestin drospirenone used in the birth control pill Yasmin . It suppresses androgens, so again, it should be helpful, but again, it's often not. When you stop spironolactone, your hair loss will worsen.

Minoxidil (Rogaine)

It's a blood pressure drug that has been "repurposed" to be applied topically and improve blood supply the hair follicles. Unfortunately, one of its side effects is hair loss.

Natural Treatment of Hair Loss

The only way to treat hair loss is to identify the underlying cause or *causes* and treat that.

I know it can be overwhelming so I've broken it down into eight simple questions:

Is it your medication?

Many medications cause hair loss including antibiotics, antifungals, acne medication, antidepressants, and hormonal birth control. And remember, your hair loss would have started three or more months *after* starting the medication. Please speak to your doctor about an alternative.

Are you eating enough?

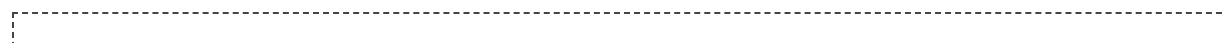
Your hair needs you to be fully nourished in every respect including all the macro and micronutrients we discussed in Chapter 6. You're more at risk for hair loss if you're following a vegetarian or low-carb diet.

Is it your thyroid?

Both underactive and overactive thyroid can cause hair loss. Keep in mind that your doctor might have missed a thyroid diagnosis. Please see the Thyroid Disease section earlier in this chapter.

Do you ovulate?

Your hair *loves* estrogen and progesterone, and the only way to make those hormones is to ovulate each month and have a natural, healthy menstrual cycle.





Your period is the report card of your health. Your hair is *also* a report card—to an even greater degree if that’s possible.

Do you need zinc?

Zinc is great for hair because it promotes ovulation, reduces inflammation, and blocks androgens. It also directly stimulates hair growth. Common causes of zinc deficiency include a vegetarian diet and hormonal birth control. Please see the zinc sections throughout the book.

Do you need iron?

Hair needs a lot of iron. So, no matter the cause of your hair loss, you will need sufficient iron to be able to recover. Ask your doctor to test your “serum ferritin.” It should be at least 50 ng/mL. If it’s lower than 50, then please consider supplementing 25 mg of a gentle iron such as iron bisglycinate. Take it with food to improve absorption.

Do you have PCOS?

Do you have the androgen excess condition PCOS? Are you sure? Remember, PCOS cannot be diagnosed or *ruled out* by ultrasound. If you *do* have PCOS, then you need to treat the driver of your type of PCOS, as well as consider taking an anti-androgen supplement such as DIM. You can also consider using a topical treatment such as rosemary, which has a local anti-androgen effect [\[433\]](#), or melatonin, which reduces inflammation [\[434\]](#). Please see Chapter 7 for a full discussion of PCOS and anti-androgen treatments.

Do you have inflammation?

Inflammation *hyper-sensitizes* hair follicles to androgens, which is why chronic inflammation can worsen androgen hypersensitivity and androgenetic alopecia. You’ll know that inflammation is an issue if you suffer chronic dermatitis or irritation of your scalp. Treatment is to avoid inflammatory foods such as dairy and wheat, and correct any underlying digestive problems (because digestive problems can cause inflammation). You can also consider the topical rosemary treatment described in the [Female Pattern Hair Loss](#) section in Chapter 7.

Time Lag

Even with the best treatment, you can't expect to see any improvement for at least three to six months. Why? Because your hair has a telogen (resting) phase, which is like a "hair waiting room." Once your hairs have entered the telogen phase, they are destined to fall two to six months later—*no matter what you do*.



telogen phase

Hairs in the telogen phase are dormant or resting before they fall out. The telogen phase has a fixed duration of one to four months. In contrast, hairs in the anagen phase are actively growing. The anagen phase has a variable duration of years.

For example, you may currently have a lot of hair in the telogen phase because of something that happened months ago. Those hairs are *going to fall*, and there's nothing you can do to stop them. You can only work to prevent further hair loss three to six months from now.

Stay calm, be patient, and stick with your treatment.

How to Come Off Hormonal Birth Control

As we saw in the [Coming Off the Pill](#) section in Chapter 2, you will probably feel better when you stop hormonal birth control. Better mood, more energy, and regular cycles. That is the most common experience.

You may, however, develop problems such as post-pill acne, PMS, PCOS, amenorrhea, anxiety, heavy periods, painful periods, and facial hair.

What causes post-pill symptoms? It's not the drugs themselves because they leave your body pretty quickly. Instead, post-pill syndrome is the result of:

1. Withdrawal from the strong synthetic estrogen
2. Surge in androgens (especially if you have a tendency to PCOS)
3. Real periods for the first time in years
4. Delay in establishing regular ovulation

Estrogen withdrawal

The estrogen in the pill (ethinylestradiol) is four times stronger than your own lovely estradiol [435]. That much estrogen has a strongly stimulating effect on your brain chemistry, which you will feel *when you stop taking it*. It's like coming off a drug.

What to do: Find a way to ovulate so you can make your own estrogen and progesterone. Please refer to Chapter 7 for treatment strategies. You can also try a bit of natural progesterone cream for its soothing effects on the brain. See the Natural Progesterone section in Chapter 10.

Surge in androgens

Your androgens (male hormones) will increase when you stop the pill. A small increase is beneficial for mood and libido, but a large increase can cause the unwanted androgen symptoms of acne, hair loss, and hirsutism. There are several reasons why you can end up a large post-pill surge in androgens.

- You were on an *androgen-suppressing* progestin such drospirenone or cyproterone, so your body had to compensate by upregulating androgen production. (For a discussion of the “androgen-index” of birth control, please see Chapter 2.)
- You had an underlying tendency to PCOS *before* you took birth control.
- You developed insulin resistance from hormonal birth control and so now tend to insulin resistant PCOS.

We looked at the problem of post-pill androgens in both the [Post-Pill Acne](#) section in Chapter 2, and the [Post-Pill PCOS](#) section in Chapter 7.

What to do: If you're prone to acne and other androgen symptoms then, please, start treatment at least one month *before* you stop the pill. For androgen-lowering and acne treatment ideas, see the [Acne Treatment](#) and [Anti-Androgen Treatment](#) sections in Chapter 7.

Real periods for the first time in years

If you want to know what to expect when going off hormonal birth control, here's one simple question: What were your periods like before you took birth control? I'm not talking about your pill-bleeds—because they are not periods. I'm talking about your real periods—the ones you had like maybe ten years ago.

Were those real periods regular? Were they heavy or painful? Did your skin break out? Because those problems have not gone away. They have merely been masked by birth control, and they will most likely re-emerge.

What to do: Forget that you've just come off birth control and go back to the drawing board to treat the period problem that has *always been there*. For example, for PMS, see Chapter 8. For heavy or painful periods, please see Chapter 9.

Delay in establishing regular ovulation

If you're struggling with PCOS or amenorrhea after coming off birth control, you're not alone. As we saw with [Christine's story](#) in Chapter 1, it can take months, even years, to ovulate again after hormonal birth control.

What to do: It can take a long time to get your period after stopping the pill. It's not a problem with you, but rather with the ovulation-suppressing drug you were given.

That said, I do encourage you to work to promote ovulation. For treatment ideas, please see the [Post-Pill PCOS](#) and [Hypothalamic Amenorrhea](#) sections in Chapter 7.

How to Talk to Your Doctor

If you've ever come out of your doctor's office feeling frustrated and confused, then you know how important this section is. Your doctor did not mean to confuse you. She was trying to help, and she probably came away feeling pretty confused herself. It's because you were talking apples and oranges to each other.

For example, you may want to talk about "estrogen dominance," but your doctor isn't familiar with that term. All she knows is that you have heavy periods, and she wants to treat you with a clinically proven treatment such as the Mirena IUD. Your doctor doesn't know about the natural treatment options. Of course, she is perplexed as to why you hesitate or delay.

It doesn't have to be like that. Your doctor wants to help, and she *will* help—if you just learn how to talk to each other.

Here is a list of questions and statements to help to keep the conversation on track.

No periods or irregular periods:

- Have I been screened for celiac disease? I've heard it's a common reason for amenorrhea.
- Have I been tested for thyroid? What is my actual TSH reading? I've heard it should ideally be less than 3.
- Have I been tested for high prolactin?
- Could one of my medications be stopping my period?
- I'm not sure I'm eating enough. Could that be why I'm not getting periods?
- I feel quite anxious about food, and think I might have an eating disorder. Can you please help me?
- I'm vegetarian. Can you please check my levels of iron, zinc, and vitamin B12?
- Is there any chance I'm in menopause? Have you checked my FSH?
- What is my actual diagnosis? Is it PCOS? Is it hypothalamic amenorrhea?

You're told you have PCOS:

- Was this diagnosis based solely on my ultrasound? I understand that PCOS cannot be diagnosed that way.
- My symptoms are only since I came off the pill. I never had this problem before. Is it possible it's just a post-pill adjustment and might get better on its own?
- Have you ruled out a condition called adrenal hyperplasia?
- Do I have insulin resistance? I understand it cannot be diagnosed by a glucose test. Can you please test me for "fasting insulin" or a "glucose tolerance test with insulin"?
- Do I have elevated testosterone or another androgen such as androstenedione or DHEAS?
- Do I have elevated LH?
- Can you please check me for deficiency of zinc and vitamin D?
- Can you please test my progesterone? I want to see if I ovulated. (Remember, a progesterone test must be timed to be about one week *after* ovulation or one week *before* your next expected period.)
- I know I used to have PCOS, but everything is fine now. My periods are coming regularly, and I have no symptoms. I don't think I meet the diagnostic criteria anymore.

Hair loss:

- Have I been tested for thyroid? What is my actual TSH reading? I've heard it should ideally be less than 2.5.
- Have I been tested for iron? What is my actual ferritin reading? I've heard it should ideally be greater than 50 ng/mL.
- Have I been tested for celiac disease?
- Could my hormonal birth control be causing my hair loss? (Your doctor may mistakenly say "no" to this one. Ask her to look it up.)
- My hair loss started a few months after _____. Could that be the cause?

You're being pressured to take hormonal birth control:

- I want to try another method of birth control such as fertility awareness method, Daysy, copper IUD, condoms, cervical cap, or diaphragm.
- I want the copper IUD. I understand it's safe and suitable for young women, even before children.
- I want the copper IUD. I understand it makes periods heavier, but only by 20 percent.
- Why exactly do I need the pill?
- I've heard that pill bleeds are not real bleeds. Could going on the pill now make it more difficult to get my real period later? (The answer is Yes.)
- Are you saying I need the pill for my bone health? I understand that the new research says the pill doesn't actually help with bones.
- My periods were fine before I went on the pill. I understand it might take time to get my periods back. I'd like to give it a few more months.
- I've heard the birth control pill worsens insulin resistance and PCOS. Is it really the right choice for me?
- I am going to change my diet and take nutritional supplements to improve my insulin resistance and PCOS. I would like some time to do that.

Your doctor is critical of you using fertility awareness method (FAM) of contraception:

- You might be thinking of the rhythm method which does not have a high efficacy. I'm doing something different. I'm using the symptothermal method of birth control where I track my morning temperature. Research shows that when done properly, it can be as effective as the pill.
- I'm using the Daysy Fertility Monitor, which is a certified medical device with an efficacy of 99.4 percent.

You discover you're not ovulating:

- I'm having periods, but I don't think I'm ovulating. I think they're called anovulatory cycles.
- Could you please check this by testing my progesterone? (Remember, a progesterone test must be timed to be about one week *after* ovulation or one week *before* your next expected period.)
- Do you think I could have PCOS? Can you please test my insulin and testosterone?
- Can you please test my thyroid?

Heavy periods:

- Have I been tested for thyroid? I understand it's a common reason for heavy periods.
- What is my actual TSH reading? I've heard it should ideally be less than 3.
- My mother or sister have autoimmune thyroid disease. Can you please check me for "thyroid antibodies"?
- My thyroid seems a little borderline. Could I please try some thyroid medication for a few months to see if it lightens my periods?
- Could I have a coagulation disorder like von Willebrand disease? I understand it's the reason for 1 in 5 cases of heavy periods.
- Have I been tested for iron? What is my actual ferritin reading? I've heard it should ideally be greater than 50 ng/mL.
- Do I have insulin resistance? Can you please test me for "fasting insulin" or a "glucose tolerance test with insulin?"
- Do I have fibroids? Are they contributing to my bleeding? I've heard that most fibroids do NOT cause heavy bleeding.

- Could I have endometriosis? Could I please have a referral to a gynecologist to discuss this possibility?
- Could I have adenomyosis? Could I please have a referral to a gynecologist to discuss this possibility?
- Could you please consider prescribing a micronized progesterone capsule such as Prometrium ? I understand it works as well as a synthetic progestin to reduce heavy bleeding, but without the side effects.

Pelvic pain:

- My pain is so bad I take ____ painkillers per month.
- My pain is so bad that I miss school or work.
- I experience pain between periods.
- I experience a deep, stabbing pain with sex.
- Could I have endometriosis? Could I please have a referral to a gynecologist to discuss this possibility?
- Could I have adenomyosis? Could I please have a referral to a gynecologist to discuss this possibility?
- Do you think a pelvic ultrasound would be helpful?
- A normal ultrasound doesn't mean I don't have endometriosis, correct? Could I please have a referral to a gynecologist to discuss the possibility of endometriosis?

You're going to have surgery for endometriosis:

- What type of surgical method will you use?
- I've heard there is a better long-term outcome with something called "excision surgery."
- Will you remove all the lesions?
- Will the tissue be sent to pathology for identification?
- Do you have experience removing endometriosis from the bladder or bowel?

Perimenopausal mood symptoms:

- My premenstrual symptoms are getting worse. I understand it's because I'm perimenopausal and I don't make as much progesterone I

used to.

- Could you please prescribe a micronized progesterone capsule such as Prometrium ? It can relieve perimenopausal mood symptoms.
- Have you tested my thyroid?
- What is my actual TSH reading? I've heard it should ideally be less than 3.

You're being pressured to have a hysterectomy:

- Is the Mirena IUD an option for me?
- Is endometrial ablation an option for me?
- Is uterine artery embolization an option for me?
- Would you recommend this procedure for yourself, your wife, or your daughter?
- I understand that fibroids and bleeding often resolve with menopause. Can I try to hold on till then?
- Have you tested my FSH (follicle-stimulating hormone)? If it is high, does that suggest I might enter menopause soon? Can I try to hold on until then?
- My mother went through menopause at 45 (for example). Does that suggest I might enter menopause soon? Can I try to hold on until then?
- Could you please consider prescribing a micronized progesterone capsule such as Prometrium ? I understand it works as well as a synthetic progestin to reduce heavy bleeding, but without the side effects.

After a hysterectomy:

- Have I reached menopause?
- Can you please test my FSH so we can find out?

How Long Will It Take to See Results?

Days or Weeks

PMS can improve within hours as soon you boost GABA with magnesium and vitamin B6.

Normal period pain should improve within the very first month of treatment as soon as you remove dairy and take zinc. It should completely resolve after a few months.

There are essentially two parts to the improvement of both PMS and period pain. The first part is to reduce estrogen and inflammation. It happens quickly over days or weeks. The next part is to enhance progesterone. It takes the hundred days for your ovarian follicles to complete their journey to ovulation.

One to Two Months

Endometriosis can also start to improve fairly quickly. You can expect some results as inflammation goes down in the first one to two months. After that, improvement should be slow but steady.

The **heavy periods** of teenagers usually improve from the second month as soon as you remove dairy and take iron. The heavy periods of perimenopause can also improve quite quickly with dairy-free diet, iron, turmeric, and progesterone capsules unless there's an underlying problem with thyroid or insulin resistance. Then the improvement will take longer (see below).

Fibroids should stop growing within the first couple of months. Then you will need to maintain the treatment until the fibroids shrink with menopause. Fibroids usually will not shrink with natural treatment.

Three to Six Months

If your **heavy periods of perimenopause** are due to a problem with thyroid or insulin resistance (or both), your improvement will take a few months.

Irregular periods (PCOS or hypothalamic amenorrhea) take a minimum of three months because that's how long it takes your ovarian follicle to journey all the way to ovulation. Of all the conditions discussed in Chapter 7, hidden-driver PCOS is the fastest to improve. Once you get the right treatment, you can expect a period within three months. Insulin resistant PCOS takes longer because you must first correct insulin resistance, and

that can take a few months. Only *then* can your follicles begin their hundred-day journey to ovulation.

Acne will improve somewhat in the first month or two as you reduce inflammation. After that, you might have to wait six months because that's how long it takes to expel the sebum plugs that are blocking your pores. Post-pill acne will usually reach its worst point about six months off the pill. You can then expect full improvement about six months after that.

Six Months to a Year or More

Hair loss is slow to change. At the bare minimum, you'll have to wait three months because that's how long your hair stays in its telogen or resting phase. But that's once you get everything just right in your body. If you have underlying hormonal problems, then you'll need a few months to fix that, and then wait another three months.

Hirsutism is the slowest symptom to change. The telogen phase of facial hair follicles is even longer than scalp hair follicles, so you cannot expect hirsutism to improve for at least 12 months. In the meantime, you can use hair removal methods such as tweezing, waxing, laser, and electrolysis.

A Final Message: Trust Your Body

Your body wants to be healthy. It wants to have healthy periods.
Treat the cause, and play the long game.
Stick with your treatment. Trust your body.

Lara Briden
Christchurch, New Zealand
September 2017

Appendix A



Resources

Author's Blog

- Lara Briden's Healthy Hormone Blog
<http://www.larabriden.com/>

Period Apps and Body Literacy

- Kindara: <https://www.kindara.com/home>
- Clue: <http://www.helloclue.com/>
- Groove: <http://www.readytogroove.com/>
- Selene: <http://daringplan.com/>
- Glow: <https://glowing.com/features>
- Daysy: <https://daysy.me/>
- Ovia: <https://www.ovuline.com/>
- Natural Cycles: <https://app.naturalcycles.com/>
- The Centre for Menstrual Cycle and Ovulation Research (CeMCOR)
Menstrual Cycle Diary: <http://www.cemcor.ubc.ca/resources/daily-menstrual-cycle-diary>
- The Centre for Menstrual Cycle and Ovulation Research (CeMCOR)
Quantitative Basal Temperature (QBT) Method:
<http://www.cemcor.ubc.ca/resources/documenting-ovulation-quantitative-basal-temperature-qbt>
- Tempdrop: <https://tempdrop.xyz/>
- NaProTECHNOLOGY: <http://www.naprotechnology.com/>

Menstrual Supplies

- Diva Cup: <http://divacup.com/>
- Lunette: <http://www.lunette.com/>
- Luna Pads: <https://lunapads.com/>

Contraception Resources

Fertility Awareness Method (FAM):

- Daysy fertility monitor: <https://daysy.me/>
- *Taking Charge of Your Fertility* by Toni Weschler
- Wikipedia: https://en.wikipedia.org/wiki/Fertility_awareness
- Fertility Friday: <https://fertilityfriday.com/>
- Kindara: <https://www.kindara.com/home>
- Justisse: <https://www.justisse.ca/>
- FACTS: <http://www.factsaboutfertility.org/>
- Serena: <http://serena.ca/>
- Natural Womanhood: <https://naturalwomanhood.org/>
- Femmhealth: <https://femmhealth.org/>

Other contraceptive methods

- Femcap cervical cap: <https://femcap.com/>
- Caya diaphragm: <http://caya.us.com/>
- Hex condoms: <https://www.lelo.com/hex-condoms-original>
- myONE Perfect Fit from ONE Condoms: <https://myonecondoms.com/>
- Gynefix frameless IUD: <http://www.wildemeersch.com/products/gynefix/>

PCOS Resources

- *8 Steps to Reverse Your PCOS* by Dr. Fiona McCulloch
- The PCOS Nutritionist: <http://www.thepcosnutritionist.com/>
- PCOS Diva: <http://pcosdiva.com/>
- The Centre for Menstrual Cycle and Ovulation Research (CeMCOR)
Cyclic progesterone therapy:
<http://www.cemcor.ca/resources/topics/cyclic-progesterone-therapy>
- MFB Fertility Ovulation Double Check® (In-home progesterone urine test): <http://www.mfbfertility.com/>

Endometriosis Resources

- *Endo-what* film: <https://endowhat.com/>
- *Citizen Endo* research project and app: <http://citizenendo.org/>

- Nancy's Nook Endometriosis Education and Discussion Group:
<https://www.facebook.com/groups/418136991574617/>

Perimenopause Resources

- The Centre for Menstrual Cycle and Ovulation Research (CeMCOR)
Daily Perimenopause Diary:
<http://www.cemcor.ubc.ca/resources/daily-perimenopause-diary>
- *Estrogen's Storm Season—stories of perimenopause* (second edition, 2017) by Dr. Jerilynn Prior
- The Centre for Menstrual Cycle and Ovulation Research (CeMCOR)
Cyclic progesterone therapy:
<http://www.cemcor.ca/resources/topics/cyclic-progesterone-therapy>
- Julva DHEA vaginal cream: <https://order.julva.com/the-dream-cream>

Menstruation Activism

- 5th Vital Sign: <http://www.5thvitalsign.com/>
- *Sweetening the Pill* by Holly Grigg-Spall
<http://www.sweeteningthepill.com/>
- *Sweetening the Pill* documentary: <https://vimeo.com/129738582>
- The Centre for Menstrual Cycle and Ovulation Research (CeMCOR):
<http://www.cemcor.ubc.ca/>
- Society of Menstrual Cycle Research:
<http://www.menstruationresearch.org/>
- Period. The Menstrual Movement: <https://www.period.org/>
- Hormones Matter: <https://www.hormonesmatter.com/>
- The Cup Effect: <http://www.thecupeffect.org/>
- Menstrual Hygiene Day: <http://menstrualhygieneday.org/>
- Nicole Jardim, The Period Girl: <http://nicolejardim.com/>
- Kate Callaghan, The Holistic Nutritionist:
<http://www.theholisticnutritionist.com/>
- *The Woman Code* by Alisa Vitti
- *The Dangers of Depo: The World's Most Dangerous Birth Control* by Traci Johnstone and Dr. Poppy Daniels

How to Locate a Naturopathic Doctor or Naturopath

In the US:

- The American Association of Naturopathic Physicians
<http://www.naturopathic.org/>

In Canada:

- Canadian Association of Naturopathic Doctors
<http://www.cand.ca/>

In Australia:

- Australian Register of Naturopaths and Herbalists
<http://www.aronah.org/>

Help for Eating Disorders

In the US:

- Office on Women's Health—Eating Disorders
<https://www.womenshealth.gov/body-image/eating-disorders/>

In Canada:

- National Eating Disorder Information Centre (NEDIC)
<http://nedic.ca/>

In the UK:

- NHS—Eating Disorders
<http://www.nhs.uk/conditions/eating-disorders/>

In Australia:

- National Eating Disorders Collaboration (NEDC)
<http://www.nedc.com.au/>

Information About Environmental Toxins

- Environmental Working Group for updates about cosmetics, fish, produce, and other sources of environmental toxins
<http://www.ewg.org/>

Digestive Health

- Low-FODMAP diet for irritable bowel syndrome
<http://www.med.monash.edu/cecs/gastro/fodmap/>

Supplements

I've provided some suggested brands as a *starting point*, and not an exhaustive list. Please choose a supplement that is available to you and not too expensive.

Alpha lipoic acid

- **Useful for:** PCOS, insulin resistance, detoxification
- **Daily dose:** 100-600 mg
- **Suggested brand(s):** Douglas Laboratories Alpha-Lipoic Acid, Thorne Research Alpha-Lipoic Acid

Ashwagandha (Withania)

- **Useful for:** Functional hypothalamic amenorrhea, fatigue, perimenopause, thyroid disease
- **Daily dose:** As directed
- **Suggested brand(s):** Douglas Laboratories Ayur-Ashwagandha capsules, Douglas Laboratories AdrenoMend, Pure Encapsulations Phyto-ADR

B-complex

- **Useful for:** HPA axis dysfunction, anxiety, fatigue
- **Daily dose:** As directed
- **Suggested brand(s):** Thorne Research Stress B-Complex, Integrative Therapeutics Active B-Complex

Betaine HCl

- **Useful for:** Digestive problems, SIBO
- **Daily dose:** As directed
- **Suggested brand(s):** Thorne Research Betaine HCL & Pepsin

Berberine

- **Useful for:** PCOS, acne, digestive problems, SIBO
- **Daily dose:** As directed
- **Suggested brand(s):** Thorne Research Berberine 500 capsules, Metagenics CandiBactin-BR

Calcium d-glucarate

- **Useful for:** PMS, uterine fibroids, detoxification, perimenopause
- **Daily dose:** 1000-1500 mg
- **Suggested brand(s):** Thorne Research Calcium D-Glucarate

Coenzyme Q10

- **Useful for:** Perimenopause
- **Daily dose:** 100 mg
- **Suggested brand(s):** Thorne Research Q-Best, Douglas Laboratories Ubiquinol-QH

Diindolylmethane (DIM)

- **Useful for:** Hirsutism, acne, perimenopause
- **Daily dose:** 200 mg
- **Suggested brand(s):** Source Naturals DIM (Diindolylmethane)

Fish oil

- **Useful for:** Period pain
- **Daily dose:** 1000 mg
- **Suggested brand(s):** Thorne Research Super EPA, Nordic Naturals Omega-3

Glutathione

- **Useful for:** Detoxification and immune support
- **Daily dose:** 100-400 mg
- **Suggested brand(s):** LypriCel Liposomal GSH

Iodine

- **Useful for:** PMS, breast pain, uterine fibroids, heavy periods, ovarian cysts, thyroid disease, perimenopause
- **Daily dose:** 200-3000 mcg (0.2-3 mg)
- **Suggested brand(s):** Violet Daily

Iron

- **Useful for:** PMS, heavy periods
- **Daily dose:** 15-50 mg
- **Suggested brand(s):** Thorne Research Iron Bisglycinate

Magnesium

- **Useful for:** PCOS, insulin resistance, functional hypothalamic amenorrhea, PMS, migraines, fatigue, sleep, period pain, detoxification, perimenopause
- **Daily dose:** 300 mg
- **Suggested brand(s):** Designs for Health Magnesium Glycinate Chelate, Pure Encapsulations Magnesium Glycinate, Natural Factors WomenSense MagSense powder, Metagenics Australia CardioX, Orthoplex MagTaur Xcell

Melatonin

- **Useful for:** Sleep, PCOS, hair loss, migraines

- **Daily dose:** 0.5 to 3 mg

Milk thistle

- **Useful for:** Detoxification, SIBO
- **Daily dose:** As directed
- **Suggested brand(s):** Designs for Health LV-GB, Thorne Research S.A.T, Flordis Legalon

Mushroom extract

- **Useful for:** Immune support
- **Daily dose:** As directed
- **Suggested brand(s):** Thorne Research Myco-Immune liquid

Myo-inositol

- **Useful for:** PCOS
- **Daily dose:** 2000-3000 mg
- **Suggested brand(s):** Ovasitol Inositol Powder

N-acetyl cysteine

- **Useful for:** PCOS, endometriosis, detoxification
- **Daily dose:** 500-2000 mg
- **Suggested brand(s):** Pure Encapsulations NAC, Douglas Laboratories N-Acetyl-L-Cysteine

Peony and licorice

- **Useful for:** PCOS, hirsutism
- **Daily dose:** As directed
- **Suggested brand(s):** Kan Herbs Peony and Licorice Formula, Metagenics Australia T-Clear

Probiotics

- **Useful for:** Estrogen excess, PMS, endometriosis, digestive problems, yeast infections and bacterial vaginosis

- **Daily dose:** As directed
- **Suggested brand(s):** Please read the [How to Choose a Probiotic section](#) in Chapter 11

Progesterone (Micronized or Natural)

- **Useful for:** PCOS, hirsutism, PMS, migraines, heavy periods, endometriosis, perimenopause
- **Daily dose:** 10-100 mg
- **Suggested brand(s):** Metabolic Maintenance Progesterone Cream, Now Foods Natural Progesterone, Prometrium capsules

Resveratrol

- **Useful for:** PCOS, endometriosis
- **Daily dose:** 40-200 mg
- **Suggested brand(s):** Pure Encapsulations Resveratrol

Rhodiola

- **Useful for:** PMS, fatigue
- **Daily dose:** 150-300 mg of a standardized preparation
- **Suggested brand(s):** Thorne Research Rhodiola, Metagenics Australia Adrenotone

S-adenosylmethionine (S-AMe)

- **Useful for:** PMS, detoxification
- **Daily dose:** 200 mg
- **Suggested brand(s):** Pure Encapsulations S-AMe (S-Adenosylmethionine)

Selenium

- **Useful for:** PMS, endometriosis, ovarian cysts, detoxification, thyroid disease
- **Daily dose:** 100-150 mcg
- **Suggested brand(s):** Thorne Research Selenomethionine

St John's wort

- **Useful for:** PMS
- **Daily dose:** 300 mg twice daily
- **Suggested brand(s):** Flordis Remotiv

Taurine

- **Useful for:** Insulin-resistant PCOS, perimenopause
- **Daily dose:** 1000-3000 mg
- **Suggested brand(s):** Natural Factors WomenSense MagSense powder, Metagenics Australia CardioX, Orthoplex MagTaur Xcell

Turmeric or Curcumin

- **Useful for:** Heavy periods, period pain, endometriosis, adenomyosis, detoxification
- **Daily dose:** As directed
- **Suggested brand(s):** Thorne Research Meriva 500-SF, Pure Encapsulations Curcumin 500 with Bioperine

Vitamin B2 (riboflavin)

- **Useful for:** Migraines
- **Daily dose:** Up to 200 mg twice daily
- **Suggested brand(s):** Thorne Research Riboflavin 5' Phosphate, Now Foods B-2,

Vitamin B6 (P5P)

- **Useful for:** PMS, histamine intolerance, heavy periods, perimenopause
- **Daily dose:** 10-150 mg
- **Suggested brand(s):** Thorne Research Pyridoxal 5'-Phosphate, Douglas Laboratories® B-6,

Vitamin B12 (methylcobalamin)

- **Useful for:** PMS, heavy periods

- **Daily dose:** 1000 mcg
- **Suggested brand(s):** Douglas Laboratories Methyl B12 Plus

Vitamin E

- **Useful for:** Breast pain
- **Daily dose:** 400 IU per day
- **Suggested brand(s):** Thorne Research Ultimate-E

Vitex

- **Useful for:** Hirsutism, hypothalamic amenorrhea, high prolactin, PMS, breast pain
- **Daily dose:** 200-2000 mg
- **Suggested brand(s):** Flordis Premular

Zinc

- **Useful for:** HPA axis dysfunction, PCOS, acne, PMS, endometriosis, period pain
- **Daily dose:** 20-50 mg
- **Suggested brand(s):** Thorne Research Zinc Picolinate

Ziziphus

- **Useful for:** Sleep, perimenopause
- **Daily dose:** 20-30 mg
- **Suggested brand(s):** Douglas Laboratories® Seditol Plus

Appendix B



Glossary

17-OH progesterone

17-OH progesterone is an adrenal hormone that is elevated in the androgen excess condition congenital adrenal hyperplasia.

A1 dairy

Dairy products from Holstein cows, which contains a potentially inflammatory casein.

adaptogen

In herbal medicine, an adaptogen is a plant extract which helps the body adapt to stress. The term is not recognized by the scientific community.

adenomyosis

Adenomyosis is a painful condition in which endometrial tissue exists and grows within the muscular wall of the uterus.

adhesions

Adhesions are bands of connective tissue or scar tissue that bind pelvic structures together and cause pain. They are the result of both the disease process of endometriosis and the surgery used to treat it.

allopregnanolone (ALLO)

Allopregnanolone is a calming neurosteroid that acts like GABA in your brain.

alopecia

Alopecia means hair loss.

amenorrhea

Amenorrhea means no menstruation or no periods.

androgen

An androgen is a male hormone that promotes male characteristics.

androgenetic alopecia

Androgenetic alopecia is also called androgenic alopecia or female pattern hair loss. It's caused by androgen excess or androgen sensitivity.

androstenedione

Androstenedione is an androgen made by your ovaries and adrenal glands.

anovulatory cycle

An anovulatory cycle is a menstrual cycle in which ovulation did not occur, and progesterone was not made.

anti-androgen

Anti-androgens (also known as androgen antagonists or testosterone blockers) are drugs or supplements that reduce androgens or block their effects.

anti-Müllerian hormone (AMH)

Anti-Müllerian hormone is made by your ovarian follicles.

autoimmune disease

Autoimmune disease occurs when immune system attacks healthy tissue.

bacterial vaginosis

Vaginosis is an overgrowth of one or more species of normal vaginal bacteria.

bioidentical hormone

A bioidentical hormone is a hormone that is structurally identical to your own human hormone.

blood count

Blood count is a blood test to determine the number of blood cells and hemoglobin.

body mass index (BMI)

Your BMI is your weight in kilograms divided by the square of your height in meters. A normal BMI is between 18.5 and 24.9.

congenital adrenal hyperplasia

Congenital adrenal hyperplasia is a common genetic disorder that causes the adrenal glands to make too many androgens.

contraception failure rate

Contraception failure rate is the percentage of couples who experience an accidental pregnancy during one year of use. It is expressed as *perfect use* and *typical use*.

corpus luteum

The corpus luteum is a temporary endocrine gland that forms from the emptied ovarian follicle after ovulation.

cytokines

Pro-inflammatory cytokines are chemical messengers that your body uses to fight infection. They are part of your body's inflammatory response.

DHEAS

DHEAS (dehydroepiandrosterone sulfate) is a steroid hormone made by the adrenal glands. It's often high with polycystic ovarian syndrome (PCOS) and low with HPA axis dysfunction. DHEAS naturally declines with age.

dopamine

Dopamine is a neurotransmitter associated with motivation and pleasure.

dysmenorrhea

Dysmenorrhea is the medical term for painful menstruation.

endocrine disrupting chemicals

Endocrine disrupting chemicals (EDCs) are substances that cause adverse health effects by altering the function of the endocrine or hormonal system. They include pesticides, metals, industrial pollutants, solvents, food additives, and personal care products.

estradiol

Estradiol is the type of estrogen made by the ovarian follicles.

estrogen metabolism

Estrogen metabolism is the healthy removal or detoxification of estrogen from the body.

ferritin

Serum ferritin is the blood test for stored iron.

FODMAPs

Fermentable, Oligo-, Di-, Mono-saccharides And Polyols. FODMAPs are a type of carbohydrate found in many foods, such as bread and fruit.

follicle

see ovarian follicle.

follicle-stimulating hormone (FSH)

Follicle-stimulating is a pituitary hormone that stimulates ovarian follicles to grow.

food allergy

Food allergy is an immediate reaction to food. It is mediated by a part of the immune system called IgE antibodies and causes symptoms such as hives or swollen airways.

food sensitivity

Food sensitivity is a broad category of adverse reactions to food. It is often a delayed reaction that involves inflammatory cytokines. Food sensitivity is different from a true food allergy.

FSH

FSH (follicle stimulating hormone) is a pituitary hormone that stimulates your ovaries.

functional hypothalamic amenorrhea (FHA)

Functional hypothalamic amenorrhea is the absence of menstruation when no medical diagnosis can be found.

gamma-Aminobutyric acid (GABA)

GABA is a neurotransmitter that promotes relaxation and enhances sleep.

glutathione

Glutathione is a natural antioxidant made by your body.

gluten

Gluten is a protein found in grains such as wheat, rye, and barley.

hemoglobin

Hemoglobin is the iron-containing protein found in red blood cells.

hirsutism

Hirsutism is excessive growth of hair on the face and body.

histamine intolerance

Histamine intolerance is the condition of having too much histamine. It can cause or worsen headaches, anxiety, insomnia, brain fog, hives, nasal congestion, as well as cause or worsen period symptoms such as acne, PMS, and period pain.

hormonal birth control

Hormonal birth control is the general term for all tablets, patches, and injections that deliver steroid drugs to suppress ovarian function. The *pill* is the most popular type.

hormone receptor

A hormone receptor is a docking station for hormones such as estrogen or progesterone. They exist in every type of cell and transmit hormonal messages deep into the cell.

HPA axis dysfunction

HPA axis dysfunction refers to a pattern of chronic stress that results in abnormal levels of cortisol.

hypothalamus

The hypothalamus is the part of the brain that sends messages to the pituitary gland.

hypothyroidism

Hypothyroidism means *insufficient thyroid hormone*.

hysterectomy

Hysterectomy is the surgical removal of the uterus. Surgical removal of both the uterus and the cervix and possibly the ovaries is called *total hysterectomy*. Surgical removal of the uterus, but not the cervix or the ovaries, is called *partial hysterectomy*.

insulin

Insulin is a hormone made by your pancreas. It stimulates your liver and muscles to take up sugar and convert it to energy.

insulin glucose challenge test

A 2-hour insulin glucose challenge test is also called *insulin assay with oral glucose tolerance test* or *glucose tolerance test with insulin*. It's similar to a glucose tolerance test, but it tests insulin as well as glucose. It involves multiple blood samples taken over a few hours following a sweet drink.

insulin resistance

Insulin resistance is a metabolic disorder that results in high levels of the hormone insulin.

interstitial cystitis

Interstitial cystitis is also called painful bladder syndrome. It is the constant sensation of pressure or pain in the bladder and pelvis.

intestinal permeability

Intestinal permeability is a condition in which tiny microscopic leaks form between the cells of your intestinal wall.

luteal phase

The luteal phase of a menstrual cycle is the 10-16 days between ovulation and the bleed. It is determined by the lifespan of the corpus luteum.

luteinizing hormone (LH)

Luteinizing hormone is the pituitary hormone that signals your ovary to release an egg.

macronutrients

Macronutrients are substances that you require in relatively large amounts and must be obtained from food.

melatonin

Melatonin is a hormone made by the pineal gland at the top of your brain.

menopause

Menopause means the cessation of menstruation. It's the life phase that begins one year after your last period [\[5\]](#).

microbiome

The genetic material of the microorganisms in a particular environment such as the body or part of the body.

micronized progesterone

Micronized progesterone is a form of replacement hormone. It is natural or bioidentical progesterone rather than a synthetic progestin. It can be

taken as a topical cream or a capsule such as the brand Prometrium .

micronutrients

Micronutrients are substances that you require in small amounts and must be obtained from food.

mitochondria

Mitochondria are tiny organelles inside your cells. They have many jobs including the manufacture of steroid hormones and cellular energy.

MTHFR

MTHFR (methylenetetrahydrofolate reductase) is an enzyme that transforms folate (folic acid) to its active form. About one in three people have a variant of the gene that makes the enzyme. The MTHFR gene mutation can be assessed with a simple blood test. If you have the variant gene, then you may need a higher dose of B vitamins.

ovarian follicle

Ovarian follicle is the sac that contains one egg or oocyte.

perimenopause

Perimenopause means “around menopause,” and refers to the hormonal changes (such as increased estrogen and decreased progesterone) that occur during the two to twelve years before menopause. The final part of perimenopause is called the *menopause transition*.

phytoestrogen

Phytoestrogens are a special group of phytonutrients that exert a weak estrogen-like effect.

phytonutrient

Phytonutrients are naturally occurring plant chemicals.

pituitary gland

The pituitary gland is a small endocrine gland attached to the base of the brain.

platelets

Platelets are blood cells whose function is to stop bleeding.

PMDD

Premenstrual dysphoric disorder is a condition of severe premenstrual depression, irritability, or anxiety. It affects about 1 in 20 women.

polycystic ovarian syndrome (PCOS)

A common hormonal condition characterized by excess male hormones in women. Please see Chapter 7.

primary amenorrhea

Primary amenorrhea means you have never had a period.

progesterone

Progesterone is a steroid hormone made by the ovary after ovulation.

progestin

Progestin is a general term for a group of molecules that are similar to the hormone progesterone.

prolactin

Prolactin is a pituitary hormone that stimulates breast development and breast milk. It suppresses ovulation.

prolactinoma

Prolactinoma is a benign pituitary tumor that releases prolactin.

prostaglandins

Prostaglandins are hormone-like compounds that have a variety of physiological effects, such as the constriction and dilation of blood vessels.

secondary amenorrhea

Secondary amenorrhea means you used to have periods, but they have stopped.

serotonin

Serotonin is a neurotransmitter that promotes feelings of well-being and happiness.

sex hormone binding globulin (SHBG)

Sex hormone binding globulin is a protein made by your liver. It binds to testosterone and estrogen.

small intestinal bacterial overgrowth (SIBO)

Small intestinal bacterial overgrowth (SIBO) is the overgrowth of normal gut bacteria in your small intestine.

standard drink

In the US, a standard drink contains 0.6 ounces (18 mL) of alcohol which equates to a 12 ounce (350 mL) glass of beer or a 5 ounce (150 mL) glass of wine.

telogen phase

Hairs in the telogen phase are dormant or resting before they fall out. The telogen phase has a fixed duration of one to four months. In contrast, hairs in the anagen phase are actively growing. The anagen phase has a variable duration of years.

thyroid antibodies

Thyroid antibodies are autoimmune antibodies that your immune system makes against your thyroid.

trans-fat

Trans-fat is a type of fat created by the processing or hydrogenation of vegetable oil.

TSH

TSH (thyroid stimulating hormone) is a pituitary hormone that stimulates your thyroid gland. It's the standard test for thyroid dysfunction and should be between 0.5 and 4 mIU/L.

ultrasound

A pelvic ultrasound is an imaging study to view your ovaries and uterus. It uses sound waves (not radiation) and is safe, noninvasive, and painless.

uterine polyps

Uterine polyps or endometrial polyps are outgrowths from the uterine lining (endometrium). They are usually benign or non-cancerous.

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Index

17-OH progesterone

[definition](#)

[8-hour eating window](#)

[for insulin resistance](#)

ablation

[for heavy menstrual bleeding](#)

[abnormal timing of fertile mucus](#)

[Accutane](#)

acne

[dairy](#)

[post-pill](#)

[premenstrual](#)

[sugar](#)

[symptom of PCOS](#)

[treatment](#)

[adaptogen herbs](#)

adaptogen

[definition](#)

[adenomyosis](#)

[definition](#)

[treatment, conventional](#)

[treatment, natural](#)

adhesions

[definition](#)

[adrenal fatigue](#)

[see HPA axis dysfunction](#)

alcohol

[breast cancer risk](#)

[effect on estrogen](#)

[inflammatory food](#)

[role in PMS](#)

allergies

[onset in perimenopause](#)

allopregnanolone (ALLO)

[definition](#)

[allopregnanolone](#)

alopecia

[definition](#)

alpha-lipoic acid

[detoxification](#)

[for insulin resistance](#)

amenorrhea

[definition](#)

[from undereating](#)

[post-pill](#)

[symptom](#)

[androgen blockers](#)

[Androgen Excess Society](#)

androgen excess

[blood tests](#)

[physical signs](#)

[androgen index](#)

androgen

[definition](#)

androgenetic alopecia

[definition](#)

[from hormonal birth control](#)

[symptom of PCOS](#)

[treatment](#)

androstenedione

[definition](#)

anovulatory cycle

[definition](#)

[anovulatory cycles](#)

[from contraceptive implants](#)

[treatment](#)

[anti-androgen treatment](#)

anti-androgen

[definition](#)

[anti-inflammatory diet](#)

anti-Müllerian hormone (AMH)

[definition](#)

antibiotics

[how they affect period health](#)

anxiety

[with PMS](#)

[Armour thyroid](#)

ashwagandha

[for irregular periods](#)

[for perimenopause](#)

[for PMS fatigue](#)

[thyroid disease](#)

autoimmune disease

[definition](#)

[thyroid](#)

B-vitamins

[for HPA axis dysfunction](#)

bacterial vaginosis

[definition](#)

[symptom](#)

[treatment](#)

berberine

[for acne](#)

[for digestive health](#)

[for endometriosis](#)

[for insulin resistance](#)

[for PCOS](#)

[beta-glucuronidase](#)

[inhibited by calcium-d-glucarate](#)

bioidentical hormone

[definition](#)

[bioidentical hormones](#)

birth control methods

[cervical cap](#)

[condoms](#)

[copper IUD](#)

[Daysy](#)

[diaphragm](#)
[female condoms](#)
[fertility awareness method](#)
[hormonal IUD](#)
[spermicide](#)
[tubal ligation](#)
[vasal gel](#)
[vasectomy](#)
[withdrawal](#)

birth control pill
[for endometriosis](#)
[bleeding for too long](#)

bleeding
[after sex](#)
[between periods](#)
[mid-cycle](#)
[ovulation](#)
[premenstrual](#)
[symptom](#)

blood clots
[from birth control pill](#)

blood count
[definition](#)

body mass index (BMI)
[definition](#)

breastfeeding
[as a reason for amenorrhea](#)

breasts
[fibrocystic](#)
[pain](#)

[butter](#)

calcium d-glucarate
[for fibroids](#)
[for PMS](#)
[for the heavy menstrual bleeding of perimenopause](#)

cancer
[from hormonal birth control](#)

[carbohydrates](#)

[Caya diaphragm](#)

[celiac disease](#)

cervical cap

[without spermicide](#)

[cervical fluid](#)

[abnormal timing](#)

[for fertility awareness method](#)

[no fertile mucus](#)

checklist

[adenomyosis](#)

[adrenal PCOS](#)

[endometriosis](#)

[estrogen metabolism](#)

[fibroids](#)

[heavy periods](#)

[heavy periods of perimenopause](#)

[inflammatory PCOS](#)

[insulin resistant PCOS](#)

[light periods](#)

[ovarian cysts](#)

[perimenopausal mood, sleep, and hot flashes](#)

[period pain](#)

[post-pill PCOS](#)

[progesterone](#)

chocolate

[for PMS](#)

cinnamon and hoelen combination

[for fibroids](#)

[clots](#)

[coagulation disorders](#)

[coffee](#)

[coming off the pill](#)

[condoms](#)

[congenital adrenal hyperplasia](#)

[definition](#)

contraception failure rate

[definition](#)

copper IUD

[safety concerns](#)

corpus luteum

[definition](#)

cortisol

[effect on periods](#)

[HPA axis dysfunction](#)

[treatment](#)

cravings

[chocolate](#)

[PMS](#)

[sugar](#)

[symptom of food sensitivity](#)

curcumin

[for heavy periods](#)

[cyproterone](#)

cytokines

[definition](#)

[D and C \(Dilation and curettage\)](#)

dairy

[A2](#)

[endometriosis](#)

[goat](#)

[inflammatory food](#)

[ovarian cysts](#)

[period pain](#)

[substitutes](#)

[symptoms of sensitivity](#)

[Depo-Provera](#)

[for endometriosis](#)

depression

[during perimenopause](#)

[from hormonal birth control](#)

[with PMS](#)

[detoxification](#)

[supplements](#)

DHEA

[after menopause](#)

DHEAS

[definition](#)

diaphragm

[with spermicide](#)

[without spermicide](#)

diet

[best](#)

[digestive health](#)

diindolylmethane (DIM)

[for the heavy menstrual bleeding of perimenopause](#)

diindolylmethane

[as an anti-androgen](#)

[for acne](#)

[doctor-speak](#)

doctors

[how to talk to](#)

[why they love hormonal birth control](#)

dopamine

[definition](#)

[dysbiosis](#)

[dysmenorrhea](#)

[conventional treatment](#)

[definition](#)

[natural treatment](#)

[symptom](#)

early periods

[symptom](#)

eating disorder

[hypothalamic amenorrhea](#)

[eating disorders](#)

[endocrine disrupting chemicals](#)

[definition](#)

[estrogen metabolism](#)

[endometrioma](#)

[endometriosis](#)

[a missed diagnosis](#)
[dairy_products](#)
[diagnosis](#)
[treatment, conventional](#)
[treatment, diet and lifestyle](#)
[treatment, supplements and herbal medicine](#)
[environmental toxins](#)
[diagnosis](#)
[mercury](#)
[pesticides](#)
[standard blood test](#)
[Epstein-Barr virus](#)
[Essure](#)
[estradiol](#)
estrogen metabolism
[definition](#)
[estrogen replacement](#)
estrogen
[addiction](#)
[benefits of](#)
[detoxification](#)
[dominance](#)
[estradiol](#)
[excess](#)
[excess, testing for](#)
[hypersensitivity to](#)
[low](#)
[low, treatment](#)
[metabolism](#)
[metabolism, checklist](#)
[metabolism, role of gut bacteria](#)
[PMS](#)
[stabilize and metabolize for PMS](#)
[withdrawal, coming off the pill](#)
[xenoestrogens](#)
[Evra patch](#)
exercise

[effect on periods
for PMS](#)

facial hair

[treatment](#)

fat

[dietary](#)

fatigue

[adrenal](#)

[from HPA axis dysregulation](#)

[from inflammation](#)

[PMS](#)

[female athlete triad](#)

[female condoms](#)

[female pattern hair loss](#)

[Femcap](#)

fermented foods

[benefits of](#)

[ferritin test](#)

ferritin

[definition](#)

[fertile mucus](#)

[for fertility awareness method](#)

[fertility awareness method](#)

fertility

[during perimenopause](#)

[fibrocystic breast disease](#)

[fibroids](#)

[risk factors](#)

[treatment, conventional](#)

[treatment, diet and lifestyle](#)

[treatment, supplements and herbal medicine](#)

fish oil

[for period pain](#)

[flooding](#)

[FODMAPs](#)

[definition](#)

[diet](#)

follicle stimulating hormone (FSH)

[effect on ovarian follicles](#)

follicle-stimulating hormone (FSH)

[definition](#)

follicle

[definition](#)

[follicular phase](#)

food allergy

[definition](#)

food cravings

[PMS](#)

[symptom of food sensitivity](#)

[food intolerance](#)

food sensitivity

[dairy products](#)

[dairy products, acne](#)

[definition](#)

[wheat](#)

FSH

[definition](#)

GABA

[role in PMS](#)

gamma-Aminobutyric acid (GABA)

[definition](#)

glucose tolerance test

[test for insulin resistance](#)

[glutathione](#)

[for detoxification](#)

[supplements](#)

[gluten sensitivity](#)

gluten

[endometriosis](#)

[gut microbiome](#)

[role in estrogen metabolism](#)

[treatment](#)

[GyneFix IUD](#)

[hair loss](#)

[androgenetic alopecia](#)
[benefits of estrogen and progesterone](#)
[conventional treatment](#)
[from birth control pill](#)
[natural treatment](#)
[time lag](#)

[Hashimoto's disease](#)

headaches

[PMS](#)

heart palpitations

[perimenopause](#)

heavy menstrual bleeding

[during perimenopause](#)

[heavy periods](#)

[coagulation disorders](#)

[diagnosis](#)

[symptom](#)

[teenagers](#)

[thyroid disease](#)

[treatment, conventional](#)

[treatment, diet and lifestyle](#)

[treatment, supplements and herbal medicine](#)

hemoglobin

[definition](#)

hirsutism

[definition](#)

[symptom of PCOS](#)

[treatment](#)

[histamine intolerance](#)

[acne](#)

[definition](#)

[in perimenopause](#)

[ovarian cysts](#)

[period pain](#)

[PMS](#)

[treatment](#)

hormonal birth control

[androgen index](#)
[blood clot risk](#)
[cancer risk and protection](#)
[definition](#)
[Depo-Provera](#)
[depression](#)
[does not mimic pregnancy.](#)
[for hair loss](#)
[for PCOS](#)
[hair loss](#)
[hormonal IUDs](#)
[how to come off](#)
[implants](#)
[injection](#)
[is it ever okay to take?](#)
[loss of libido](#)
[mini-pill](#)
[NuvaRing](#)
[patch](#)
[problems with coming off](#)
[progestin-only](#)
[side effects](#)
[types](#)
[weight gain](#)
[Zoely](#)
[hormonal resilience](#)
hormone receptor
[definition](#)
hot flashes
[menopause](#)
[perimenopause](#)
[HPA axis dysfunction](#)
[definition](#)
[testing](#)
[treatment](#)
hydrochloric acid
[symptoms of deficiency.](#)

[hypothalamic amenorrhea](#)

[ashwagandha](#)

[eating disorder](#)

[treatment, supplements and herbal medicine](#)

[Vitex](#)

hypothalamus

[definition](#)

hypothyroidism

[definition](#)

hysterectomy

[definition](#)

[for heavy menstrual bleeding](#)

ibuprofen

[for heavy periods](#)

[for period pain](#)

image

[conventional prescribing for period problems \(1\)](#)

[female reproductive anatomy \(5\)](#)

[flow chart for PCOS type \(9\)](#)

[levonorgestrel is almost testosterone \(3\)](#)

[levonorgestrel is not progesterone \(2\)](#)

[menstrual cycle estrogen/progesterone levels \(7\)](#)

[pill addiction and withdrawal \(4\)](#)

[the journey from follicle to corpus luteum \(6\)](#)

[Implanon](#)

[inflammation](#)

[cause of all period problems](#)

[from digestion](#)

[from food](#)

[role in PMS](#)

[signs and symptoms](#)

[sources](#)

[inflammatory food](#)

[alcohol](#)

[dairy](#)

[sugar](#)

[vegetable oil](#)

[wheat](#)

insomnia

[during perimenopause](#)

[PMS](#)

insulin glucose challenge test

[definition](#)

[insulin resistance](#)

[blood tests](#)

[caused by sugar](#)

[definition](#)

[diagnosis](#)

[estrogen](#)

[from hormonal birth control pill](#)

[how it drives PCOS](#)

[PCOS](#)

[testing and treatment](#)

[treatment](#)

[what causes it](#)

insulin

[definition](#)

[intermittent fasting](#)

interstitial cystitis

[definition](#)

intestinal bacteria

[see gut microbiome](#)

[intestinal permeability](#)

[risk for food sensitivities](#)

[treatment](#)

[iodine](#)

[for breast pain](#)

[for fibroids](#)

[for ovarian cysts](#)

[for PMS](#)

[testing](#)

[thyroid disease](#)

iron

[for heavy periods](#)

[for PMS](#)

[testing](#)

irregular periods

[blood tests](#)

[diagnosis and treatment](#)

[symptom](#)

[irritable bowel syndrome \(IBS\)](#)

[treatment](#)

[isotretinoin](#)

IUD

[copper](#)

[copper, safety concerns](#)

[hormonal](#)

[hormonal, as compared to copper IUD](#)

[hormonal, for endometriosis](#)

[hormonal, for heavy periods](#)

[safe for teenagers](#)

[Jadelle](#)

late periods

[symptom](#)

[levonorgestrel structure](#)

[LH test strips](#)

libido

[loss of, from birth control pill](#)

light periods

[symptom](#)

[treatment](#)

[low-carb diet](#)

[for insulin resistance](#)

Lupron

[for endometriosis](#)

[luteal phase defect](#)

[luteal phase](#)

[definition](#)

luteinizing hormone (LH)

[definition](#)

macronutrients

[definition](#)

[magnesium](#)

[dosing instructions](#)

[for detoxification](#)

[for HPA axis dysfunction](#)

[for insulin resistance](#)

[for irregular periods](#)

[for migraines](#)

[for perimenopause](#)

[for period pain](#)

[for PMS](#)

[for sleep](#)

[precautions](#)

[mastalgia](#)

[melatonin](#)

[definition](#)

[for migraines](#)

[for PCOS](#)

[for sleep](#)

[the effect of blue light](#)

[treatment for hair loss](#)

[menopause](#)

[blood test](#)

[definition](#)

[premature](#)

[reason for](#)

[reason for lack of periods](#)

[surgical](#)

[weight gain](#)

[menstrual clots](#)

[menstrual cramps](#)

[menstrual cup](#)

[menstrual pads](#)

[mercury](#)

[metformin](#)

[for PCOS](#)

[microbiome](#)

[definition](#)

micronized progesterone

[definition](#)

[see natural progesterone](#)

micronutrients

[definition](#)

migraines

[PMS](#)

milk thistle

[for detoxification](#)

[mini-pill](#)

[minoxidil](#)

[for hair loss](#)

[Mirena IUD](#)

[Mirena](#)

[as compared to copper IUD](#)

[for endometriosis](#)

[for heavy periods](#)

mitochondria

[definition](#)

[role in ovarian follicles](#)

MTHFR

[definition](#)

[link to migraines](#)

myo-inositol

[for insulin resistant PCOS](#)

[myomectomy](#)

N-acetyl cysteine

[for detoxification](#)

[for endometriosis](#)

[for PCOS](#)

[natural progesterone](#)

[as an anti-androgen](#)

[beneficial even if you don't have a uterus](#)

[for endometriosis](#)

[for migraines](#)

[for PCOS](#)

[for perimenopause](#)

[for PMS](#)

[for the heavy menstrual bleeding of perimenopause](#)

[non-celiac gluten sensitivity](#)

[Norplant](#)

[NuvaRing](#)

obesity

[from hormonal birth control pill](#)

omega-6 oils

[ratio with omega-3 oils](#)

[osteoporosis](#)

[effect of estrogen and progesterone](#)

ovarian cysts

[caused by Mirena IUD](#)

[chocolate cysts](#)

[dermoid](#)

[endometrioma](#)

[functional](#)

[prevention, diet and lifestyle](#)

[prevention, supplements and herbal medicine](#)

[symptom](#)

[treatment](#)

[treatment, conventional](#)

[ovulation test strips](#)

[ovulation](#)

[physical signs of](#)

[tracking for fertility awareness method](#)

pain

[during sex](#)

[from infection](#)

[mid-cycle](#)

[mittelschmerz](#)

[ovulation](#)

[period](#)

[symptom](#)

patient story

[Amy: Magnesium to the rescue](#)

[Christine: One year to get periods](#)

[Hannah: Second surgery for endometriosis](#)

[June: Iodine for breast pain](#)

[Karla: Post-pill PCOS](#)

[Kate: Recurrent chest infections and antibiotics](#)

[Lizzy: Lifting the fog of depression](#)

[Lori: Rescue prescription for perimenopause](#)

[Meagan: How is your period?](#)

[Nina: dramatic improvement by avoiding dairy.](#)

[Rae: Am I in early menopause?](#)

[Rose: Can I really eat potatoes?](#)

[Sam: A short light cycle](#)

[Sylvia: Why do you care if you ovulate or not?](#)

[Theresa: Two kinds of spotting](#)

[Zarah: Have you lost your period to a low-carb diet?](#)

[pelvic infection](#)

[pelvic inflammatory disease](#)

peony and licorice

[for PCOS](#)

[perimenopause](#)

[allergies](#)

[definition](#)

[heavy menstrual bleeding](#)

[high estrogen](#)

[mood and sleep problems](#)

[progesterone deficiency](#)

[period pain](#)

[cause](#)

[conventional treatment](#)

[dairy](#)

[histamine intolerance](#)

[natural treatment](#)

[normal versus abnormal](#)

[severe, treatment](#)

[symptom](#)

periods

[do women need them?](#)

[pesticides](#)

[phytoestrogens](#)

[for heavy menstrual bleeding](#)

[for the heavy periods of perimenopause](#)

[premenstrual syndrome](#)

[phytonutrients](#)

[pituitary gland](#)

[definition](#)

[plastics](#)

[how to avoid](#)

[platelets](#)

[definition](#)

[PMDD](#)

[definition](#)

[PMS](#)

[acne](#)

[avoiding dairy patient story](#)

[breast pain](#)

[cause of](#)

[caused by excess estrogen](#)

[caused by inflammation](#)

[controversy](#)

[cravings](#)

[fatigue](#)

[from stress](#)

[GABA](#)

[genetic component](#)

[headaches](#)

[histamine intolerance](#)

[post-pill](#)

[progesterone deficiency](#)

[symptoms](#)

[polycystic ovarian syndrome \(PCOS\)](#)

[adrenal](#)

[adrenal, treatment](#)

[definition](#)

[diagnosis](#)

[drivers](#)
[endocrine disrupting chemicals](#)
[genetic](#)
[hidden drivers](#)
[inflammatory](#)
[inflammatory, diagnosis](#)
[inflammatory, treatment](#)
[insulin resistant](#)
[insulin resistant, diagnosis](#)
[post-pill](#)
[post-pill, diagnosis](#)
[post-pill, patient story](#)
[post-pill, treatment](#)
[preventing uterine cancer](#)
[treatment with diet and lifestyle](#)
[treatment, conventional](#)
[treatment, natural](#)
[types](#)
[ultrasound](#)
[post-pill acne](#)
[post-pill PCOS](#)
[post-pill syndrome](#)
[postmenstrual migraines](#)
[postmenstrual syndrome](#)
[pregnancy](#)
[reason for lack of periods](#)
[premature ovarian failure](#)
[premenstrual magnification](#)
[premenstrual syndrome](#)
[primary amenorrhea](#)
[definition](#)
[probiotics](#)
[for PCOS](#)
[for PMS](#)
[how to choose](#)
[progesterone](#)
[benefits of](#)

[checklist](#)
[deficiency](#)
[deficiency, during perimenopause](#)
[deficiency, during PMS](#)
[definition](#)
[for PCOS](#)
[how to increase](#)
[testing](#)

progesterin
[definition](#)

progestins
[difference from progesterone](#)
[hair loss](#)
[negative effects](#)

prolactin
[blood test](#)
[definition](#)
[elevated](#)
[irregular periods](#)

prostaglandins
[definition](#)

[protein](#)
[reishi mushroom](#)

results
[how long will it take](#)

resveratrol
[for endometriosis](#)

Rhodiola
[for HPA axis dysfunction](#)
[for PMS](#)
[for PMS fatigue](#)

[roadmap to progesterone](#)

[Rogaine](#)

rosemary
[treatment for hair loss](#)

[Rotterdam criteria](#)

saliva test

[not accurate to diagnose PCOS](#)

[saliva testing](#)

SAM-e

[for PMS](#)

[saw palmetto](#)

[scanty periods](#)

secondary amenorrhea

[definition](#)

selenium

[detoxification](#)

[for endometriosis](#)

[for ovarian cysts](#)

[for PMS](#)

[thyroid disease](#)

serotonin

[definition](#)

sex hormone binding globulin (SHBG)

[definition](#)

SIBO

[small intestinal bacterial overgrowth](#)

[treatment](#)

sleep

[for period health](#)

[reduces sugar cravings](#)

small intestinal bacterial overgrowth (SIBO)

[definition](#)

smoking

[inflammation](#)

[soy](#)

[effect on thyroid](#)

[hypothalamic amenorrhea](#)

[spermicide](#)

spironolactone

[for hair loss](#)

[for PCOS](#)

spotting

[patient story](#)

[premenstrual, as a sign of progesterone deficiency](#)

[premenstrual, treatment](#)

[see bleeding](#)

St. John's wort

[for PMS](#)

standard drink

[definition](#)

stress

[role in PMS](#)

sugar

[addiction](#)

[cravings](#)

[cravings, symptom of food sensitivity](#)

[cravings, with PMS](#)

[inflammatory food](#)

[quit](#)

[symptothermal method](#)

[T3 hormone](#)

[tampons](#)

[toxic shock syndrome](#)

teenagers

[irregular periods](#)

[IUD safe for](#)

telogen phase

[definition](#)

temperature

[for fertility awareness method](#)

[thyroid antibodies](#)

[thyroid disease](#)

[as a reason for amenorrhea](#)

[causing heavy menstrual bleeding](#)

[conventional treatment](#)

[during perimenopause](#)

[how it causes period problems](#)

[supplements and herbal medicine](#)

[symptoms](#)

[testing](#)

[treatment](#)
thyroid hormone
[supplement](#)
[thyroxine](#)
tranexamic acid
[for heavy menstrual bleeding](#)
[trans-fat](#)
[definition](#)
TSH
[definition](#)
[tubal ligation](#)
turmeric
[for detoxification](#)
[for endometriosis](#)
[for heavy periods](#)
[for period pain](#)
ultrasound
[definition](#)
urination
[frequent, from fibroids](#)
[uterine artery embolization](#)
uterine cancer
[PCOS](#)
uterine polyps
[definition](#)
[Vagifem](#)
[vaginal atrophy](#)
vaginal discharge
[abnormal](#)
[normal](#)
[vaginal dryness](#)
[vaginal microbome](#)
[vaginismus](#)
[Vasalgel](#)
[vasectomy](#)
[vegan](#)
vegetable oil

[inflammatory food](#)
vegetables
[anti-inflammatory](#)
vegetarian diet
[as a reason for amenorrhea](#)
[vegetarian](#)
Visanne
[for endometriosis](#)
vitamin B2
[for migraines](#)
vitamin B6
[for PMS](#)
[vitamin D](#)
[for insulin resistance](#)
vitamin E
[for breast pain](#)
Vitex
[as an anti-androgen](#)
[for breast pain](#)
[for irregular periods](#)
[for PCOS](#)
[for PMDD](#)
[for PMS](#)
[patient story](#)
[von Willebrand disease](#)
weight gain
[after menopause](#)
wheat
[inflammatory food](#)
[thyroid disease](#)
[withdrawal method of contraception](#)
[xenoestrogens](#)
[Xulane patch](#)
yeast infections
[symptom](#)
[treatment](#)
[zinc](#)

[for acne](#)

[for adenomyosis](#)

[for endometriosis](#)

[for HPA axis dysfunction](#)

[for PCOS](#)

[for period pain](#)

[testing](#)

ziziphus

[for perimenopause](#)

[for sleep](#)

[Zoely.](#)