



1.3 million women go through menopause each year in the US. 6,000 women go through menopause daily in the US. There are approximately 75 million women who are either in perimenopause/menopause/postmenopause in the US right now, it is estimated that 2-4% of those women are using hormone therapy. We were made to fear our hormones and we have been misled about what our hormones do for us, how they are protective, not harmful. I hope to dispel some of the fear and stigma about menopause and hormone therapy for you.

What is Menopause?

Every woman will experience menopause. The actual term menopause is a single day in a woman's life, it is 12 months after her last period. The time before this is called perimenopause and the time after is called post menopause. A woman spends $\frac{1}{3}$ of her life in this stage of life. Perimenopause symptoms typically start 7-10 years before the last period, with the average age of menopause being 51, but that last period can happen anywhere between ages 45-58 for most women. Once you stop having periods you are postmenopausal for the rest of your life.

Why are these terms important? It is important to know what stage of "menopause" if you are in to understand what is happening in and to your body.

For the purpose of this information I will use the encompassing term of "menopause" for all 3 stages.

Why do women experience Menopause?

When a woman is born she is born with all of her reproductive material. That means she is born with all of her eggs (unlike men who do not start to produce sperm until puberty and continue to do so for their entire lives), the eggs are stored in the ovaries. The ovaries are a housing unit, the hormones we make are made by the eggs inside the ovaries, not the ovaries themselves. Women are born with about 1 million eggs. By the time a woman is in her 30's, she is down to about 200,000-400,000 eggs. By the time a woman is 40 she has approximately 10,000 - 30,000 eggs, and by the time she is 50 she has around 1,000 eggs left.

When we are most fertile, ages 20– early 30’s we ovulate between 500–1000 eggs a month. Most do not make it, some get lost in the abdomen, some die, while others never totally mature. The lucky few who find their way from the ovary to the fallopian tube have the opportunity to get fertilized. If they are not fertilized we experience a period.

During our reproductive era and with ovulation, our hormones estrogen and progesterone rise and fall in a very predictable pattern, because we have an abundance of eggs to produce the levels of hormones that the body needs for normal function. But as we age the egg supply diminishes and the eggs themselves are becoming older and less effective at producing the hormones needed affecting the estrogen, progesterone and testosterone levels. During the perimenopausal time of life our egg supply is quickly diminishing and the pattern of ovulation becomes chaotic, the normal up and down pattern is more erratic and unpredictable. A woman may experience skipping periods, heavier periods, lighter periods or longer intervals between periods. The amount of eggs influences the amount of estrogen and the amount of estrogen influences eggs ovulation. There is little of both. Progesterone, because it is estrogen’s partner, also decreases due to the same process and follows the same chaotic pattern, so we may experience more moodiness, irritability, and trouble sleeping. Progesterone starts to decline before estrogen does, usually beginning in our 30’s. Once we stop having periods and are post menopausal our estrogen and progesterone levels are at the lowest point and will not return on its own. Testosterone is a little different. Some of our testosterone is produced by the eggs in our ovaries, but production remains via the adrenal glands. Our testosterone levels start to decline in our late 20’s but we never run totally out of it, like we do estradiol and progesterone.

What are the symptoms?

There are over 80 symptoms of menopause. Estrogen affects every body system. Our brains, bones, eyes, skin, mouth, heart, digestive system, nervous system, and our genitourinary system. Some women experience mild symptoms, while some have severe symptoms, some have many symptoms while others have few. Many women express “just not feeling themselves” and have difficulty describing the symptoms that they are having.

Menopause symptoms are more than just hot flashes, and not every woman experiences hot flashes. 80% of women going through menopause experience this symptom, other women do not. Some women simply experience a change in their thermostat. Where you once slept in warm fuzzy pajamas and were always cold, you now sleep in a t-shirt and still feel hot.

Here are some of the symptoms:

- Acid reflux

- Anxiety/depression, irritability,
- Acne
- Body odor
- Phantom smells
- Thinning hair/hair loss
- Unwanted hair
- Joint pain
- New allergies, worsening allergies
- Worsening asthma
- New or worsening autoimmune disorders (Hashimoto's thyroiditis, rheumatoid arthritis, lupus)
- Bloating, digestive issues (constipation/diarrhea), changes to gut microbiome.
- New or worsening irritable bowel
- Belly fat, change in where fat is deposited
- Brain fog, decreased cognition, difficulty concentrating
- New or worsening ADHD/ADD
- Breast tenderness
- Brittle nails
- Burning mouth, sore tongue, mouth sores
- Fatigue
- Itchy skin, crawling skin, dry skin, electrical shock feelings.
- Decreased libido
- Vertigo
- Dry itchy eyes, eye fatigue
- Headaches, worsening migraines, new migraines
- Fatty liver (non alcoholic)
- Frozen shoulder
- Plantar fasciitis
- Musculoskeletal symptom of menopause
- Hot flashes, temperature dysregulation, night sweats
- Genitourinary symptoms, urinary tract infection, nocturia, incontinence, yeast infection, vaginal dryness, painful intercourse, bleeding with intercourse.
- Palpitations
- High cholesterol
- Period problems, heavier, shorter, longer, lighter, more close together, skipping periods
- Restless leg
- Insomnia, unable to fall asleep, stay asleep, waking in during the night, not feeling well rested.
- Loss of muscle/sarcopenia
- osteopenia/osteoporosis
- Sleep apnea
- Tinnitus

- Weight gain/inability to lose weight
- Wrinkles (we age faster after menopause, loss of collagen which estrogen is responsible for)

Many women will go to their doctor complaining of symptoms that don't seem related to each other, like new heartburn, depression, anxiety, high cholesterol, joint pain and weight gain. The doctor usually treats them separately, giving the patient a medication for heartburn like prilosec, an antianxiety medication like zoloft, a statin for her cholesterol, sending her to orthopedics or rheumatology for her joint pain and telling her to eat less and exercise more. But as a woman continues through the transition from perimenopause to menopause more and more symptoms start to appear, possibly meaning more and more medications and dismissiveness from their doctor.

Why does this happen, because general practitioners and even ObGyn's are not educated when it comes to menopause or hormone therapy. When the WHI (more about this later) study came out all education surrounding menopause and hormone therapy abruptly stopped. Now here we are 20 years of no education to the medical providers who are treating women. The practitioners who do know are far and few between and have educated themselves on the matter.

The endocrine system: the hormone machine

Our hormones are chemical messengers in our bodies, telling the body what to do and when to do it. They are involved in growth, development, mood, metabolism, sleep, emotions, sexual desire, reproduction and blood pressure. Our hormones come from our endocrine system which is a network of organs containing glands that create and release hormones into your bloodstream. Once in the bloodstream they travel to all the cells that have receptors on them that then respond to the hormones. These hormones help to maintain homeostasis in the body, which is constantly reacting to your internal environment in response to internal and external changes to keep the body functioning properly.

The endocrine system is made up of glands throughout the body:

Hypothalamus: Located in your brain it is the powerhouse of the system. It links your endocrine and nervous system together.

Pituitary gland: a pea size gland at the base of your brain. It receives signals and secretes hormones to turn into other hormones and turn on/off systems in your body, such as the ovaries and adrenal glands.

Pineal gland: located deep in your brain, it produces melatonin to help regulate sleep. Also plays a role in sexual development and puberty

Thyroid: this butterfly shaped gland is found at the base of your neck, it helps regulate our metabolism, sleep, energy and gut.

Parathyroid: these 4 glands, which sit behind the thyroid, helps regulate calcium levels for bone health, kidneys, and heart.

Adrenal glands: sit on top of your kidneys to regulate stress, blood pressure, blood glucose, metabolism, sex hormones, fight or flight response. Also produces testosterone throughout a woman's life.

Pancreas: in your upper abdomen behind the stomach and regulates blood glucose, insulin and glucagon. Produces digestive enzymes to break down protein, fats and starches so they can be used by the body for energy.

Ovaries: two small almond shaped glands sitting on either side of the uterus. They house the eggs/follicles that produce estrogen, progesterone and testosterone.

Women have 3 estrogens: estradiol, estrone, and estriol.

Estradiol is the most potent of the estrogens, the most biologically active of the estrogens. It is anti-inflammatory and keeps the other estrogens in check. It is also needed for our sexual development, triggering and regulating our menstrual cycles. Responsible for ovulation. It has protective effects on the brain, gut, heart, bone, skin, and eyes. There are estradiol receptors in every cell of every system of the body. It is essential for all bodily functions.

Estrone is a less potent estrogen (50% less active) is mostly present during puberty, it helps give us our sex characteristics and function. Estrone helps give us our curves, depositing fat to our hips, thigh, butt and breast. Estrone can be stored in fat, and can be converted into estradiol when needed during our reproductive years, but is not as effective in post menopause. In post menopause estrone is the estrogen that is most abundant. The problem is that estrone is also pro-inflammatory. Estrone is thought to play a role in the development of breast cancer. Studies show that the estrone present during perimenopause that is stored in adipose (fat tissue) is a contributor to post menopausal breast cancer diagnosis. Estrone is more prevalent in obesity also.

Estriol is the weakest of the estrogens (only 10% active as estradiol) and is most present during pregnancy. . It is the hormone that helps maintain a pregnancy and is essential in fetal development. It is what gives us the "glow" during pregnancy. Estriol also helps prepare the body for delivery and breast feeding. The levels of estriol outside of pregnancy are undetectable.

Estrogen and progesterone are made from testosterone. The eggs/follicles in the ovaries make testosterone. Aromatase and cholesterol then convert the testosterone into estradiol and progesterone. When a woman's egg supply declines, so do these essential hormones, because the eggs that are left are few and are not as healthy as they were in our teens through our 30's. At our most fertile ages (teens -30) women actually have more testosterone than estrogen and progesterone circulating in the body. Men make more testosterone than women do, but it is still an important hormone for women as it is the precursor to estrogens and progesterone. When a woman is post menopausal her husband often has more estrogens, progesterone and testosterone in his body circulating than she does.

Progesterone works in the body to maintain balance with estrogen and is the relaxation hormone. It prevents the uterine lining from overgrowth, maintains pregnancy, helps with maintaining our mood and sleep.

Our hormones all work in unison together, when the body is lacking in estrogen/progesterone the other hormones try to make up the difference, this is why we will see elevated cortisol levels, new/worsening hypothyroidism, elevated cholesterol or insulin resistance in perimenopausal/menopausal women, because the body is trying to maintain balance in a chaotic situation.

What is happening in the body?

When estrogen declines, inflammation appears leading to increased risk of conditions such as dementia, Alzheimer's, cardiovascular disease, osteoporosis, bowel issues and even cancer.

When estrogen declines our other hormones try to make up the difference. The thyroid hormone may change which can lead to hypo/hyperthyroidism. The hypothalamus of the brain sends signals to the adrenal glands which then increases our cortisol to fight against fatigue, leading to increased belly fat, which leads to insulin resistance, leading to prediabetes and diabetes.

Our blood vessels start to remodel. Estrogen is a powerful anti-inflammatory and when it is gone inflammation becomes prevalent. This process also influences our kidneys which helps to regulate our blood pressure. Our blood vessels become thinner, weaker and less elastic. This leads to hypertension, high cholesterol and eventually heart disease. More than 75% of women age 60 or older have high blood pressure. Before menopause women have a 25% less chance of having a heart attack than men, after menopause a woman's risk of a heart attack exceeds men's by 25%.

Our hormones are derived from cholesterol, it is needed to convert testosterone into estrogen and progesterone. When a woman's estrogen level is declining her cholesterol

will increase in the body's attempt to make more hormones to maintain homeostasis/balance. The problem is that there are either not enough eggs or no eggs so this process cannot happen. This elevation in cholesterol leads to heart disease.

Heart disease is the leading cause of death in women and the risk increases with estrogen decline/deprivation. The prognosis of heart disease in women is typically worse than a man's. Women have a higher risk of death and worse complications from heart disease than men do. 1 in 3 women will die of heart disease, while 1 in 31 women will die from cancer. It's estimated 1 in 16 women who are over 20 years old have coronary heart disease making it something women of all ages should be aware of.

Our bones are also affected, with old bone not being replaced with new bone, leading to bone loss. Estrogen plays a large part in keeping our minerals in our bones. Many more women suffer from osteoporosis and fractures as we age and this is due to the decrease in estrogen that leads to osteoporosis. Genetics and body build do play a role in this. Women are at greater risk than men for osteoporosis and the main cause is due to estrogen deprivation. Think about how many men do you know with osteoporosis. 1 out of 2 women will experience a fracture after menopause, 30% of those with a fracture will die within 1 year of a fracture. Out of the people in the US with osteoporosis 2/3's are women.

Our brains start to malfunction. We develop brain fog, loss of concentration, loss of focus, and the inability to multitask. We feel like we developed ADHD, some are diagnosed with new onset ADHD in their 40's or 50's. Women who have ADHD say their symptoms worsen. We have many estrogen receptors in our brain, and when estrogen levels decline during menopause it causes these receptors to not have the ability to function as they once did. The loss of estrogen can have a large impact on the brain. Estrogen is neuroprotective, reducing the risk of dementia by up to 50% in some studies. Many more women suffer from dementia than men and studies are concluding that estrogen may be the key.

Our gut microbiome is affected, again due to estrogen's powerful anti-inflammatory properties. Many women begin to suffer from constipation, diarrhea, newly diagnosed irritable bowel, and food sensitivities. As estrogen continues to decline, the lining of our intestines begins to thin, just like the skin on our face, neck and hands. This thinning of the tissue leads to leaky gut, which increases inflammation and bowel issues. Newer studies are showing that women who are estrogen deprived have a greater risk of colon cancer (up to 30%) than those who use hormone replacement.

Hormone therapy (HRT/MHT/HT/BHRT all the same thing replacing the reduced hormones with estradiol and micronized progesterone) is the single most effective way to minimize symptoms and reduce health risks that come with hormonal changes that happen during menopause.

How is perimenopause/menopause diagnosed

Most women over the age of 45 who have typical symptoms of perimenopause or menopause **do not need any hormone blood tests to make a diagnosis**. If you are under 45 years old, blood tests may be advised but may not be helpful because hormone levels can fluctuate daily or even hourly. When blood tests are taken they are just checking your levels for that minute when the needle is in your arm, they do not check the day before, the day after or even an hour after, just that single moment. A normal estrogen level is between 30-500 depending on where a woman is in her cycle.

Once a woman has not had a period for a year, and is post menopausal her estrogen and progesterone levels are almost undetectable. So checking levels in post menopause to determine your menopause status are unnecessary. Some time levels will be checked to be sure that a woman is absorbing the estradiol and is getting the most health benefits from her hormone replacement therapy. Her level needs to be at least greater than 40, but there are no hard set guidelines or studies showing what level is the most optimal, we need more research on this. If you compare a post menopausal woman's estradiol level and her husband's estradiol level, her husband will most likely have more estradiol in his body than she does in post menopause.

What is useful is women keeping an account of how they are feeling, when the symptoms are worse, when they are better, looking for patterns and the impact your symptoms are having on your life.

I have been told I can never take hormones!

Many women have heard many myths and fallacies when it comes to hormone replacement therapy (HRT). There are only a few absolute contraindications when it comes to HRT.

1. **Known or suspected breast cancer, or other estrogen/progesterone sensitive cancers.**
There are newer studies that are being done, and some women can have HRT after breast cancer, but it depends on the type of breast cancer and treatments that they have received.
A family history or even being BRCA + does not exclude a woman from using HRT.
2. **Undiagnosed uterine bleeding.** Any bleeding that has not been evaluated appropriately must be properly diagnosed prior to starting HRT. Women with unusually heavy periods, or any bleeding after menopause must be investigated before starting HRT.

3. **Active/Recent heart attack or stroke.** Oral estrogen replacement can increase the risk of a second heart attack or stroke due to the estrogen needing to be metabolized by the liver. These risks are greatly diminished when transdermal estrogen is used.
4. **Active/Recent blood clot or pulmonary embolism.** If a woman is properly anti coagulated for at least 3 months, she can have transdermal estrogen because it does not increase the risk of blood clots. Oral estrogen is never advised for women who have a history of blood clots, due to increasing the risk. A family/personal history of MTHFR does not prohibit a woman from having HRT transdermally, oral would be less advised.
5. **Pregnancy.** HRT is not appropriate during pregnancy as it can have effects on the fetus.
6. **Severe liver disease.** Individuals with significant liver impairment, may not metabolize hormones properly, making oral estrogen unsafe. Transdermal estradiol may still be an option.
7. **Allergy to any component of HRT:** For example if you are allergic to peanuts, you cannot have FDA approved micronized progesterone as the coating is made with peanut oil, but there are other options such as having the micronized progesterone made with a compounding pharmacy to have the micronized progesterone made with a different type of oil.

Conditions that do not exclude you from receiving HRT.

- Endometriosis, adenomyosis, migraine with or without aura, previous blood clot (even if it occurred while on birth control), MTHFR mutation, BRCA+, high cholesterol, high blood pressure, obesity.
- Family history of heart disease, liver disease, blood clots, or breast cancer.
- Many women believe that because of these conditions they cannot have hormone therapy, but that simply is not true.
- There are very few true contraindications to hormone therapy.

For the majority of women, hormone replacement therapy (HRT) is perfectly safe for controlling symptoms and reducing the risk of chronic diseases (heart disease, osteoporosis, dementia, diabetes and cancer).

Vaginal estrogen is safe for **everyone**, even women actively receiving treatment for breast cancer.

Misconception surrounding hormones

In 1993 a study was launched by the National Institutes of Health (NIH) called The Women's Health Initiative (WHI). This study was conducted to investigate if hormone replacement therapy had any preventative effects on chronic disease. In 2002 preliminary results of the study were released to the national news, without the authors/investigators/researchers knowledge. The headlines read "Estrogen causes 25% increase risk of breast cancer" The NIH abruptly and prematurely shut down the study due to public and professional (doctors) fears of the headlines and practically overnight the more than 80% of women who were taking HRT stopped and from that point on very very few prescriptions for HRT were given to women with menopausal symptoms. In the 1980's - 2000, 40% of the female population were using hormone therapy in the form of premarin/prempo (made from pregnant mares urine). Today only 2-4% of the female population are using hormone therapy in the form of estradiol/micronized progesterone that are body identical (made from wild yams) which means on a molecular chemical level they are identical to what the body makes and uses.

Dr. Robert Langer, who was a lead researcher for the trial is quoted saying that the researchers were "bamboozled" at an bi-annual meeting of the 41 researchers. When they entered the meeting they were told to "throw out the agenda they were sent" and that things have changed. They were told by a statistician that the study had been stopped and that a small group of the studies leaders had already written an article for JAMA, and handed the researchers copies of what was to be published. The researchers were stunned to say the least. They were not given any time to review the article that was going to be published, and this was highly unusual. As the researchers read the article they started to point out problems with what was to be published. The head of study Dr. Rossouw then told the researchers to edit the draft and bring it to him before noon, this was at 10:30am. Dr. Langer and other researchers made major revisions to the publication, and when they took them to Dr. Rossouw, before the noon deadline, they were informed it was too late and the article had been printed.

Very few women and even providers are aware that the WHI researchers have walked back all of their early findings and that they do not agree that estrogen causes cancer. In 2002, WHI investigators published in a follow up study 19 years later that women who used HRT actually had a decreased incidence of breast cancer by 23% compared to women who did not use HRT, but unfortunately this information did not make the headlines like the original study did. Since 2002 hundreds of studies have been done reanalyzing the WHI results, but not one of these studies has generated even a speckle of the attention that the original study did, and therefore public and professional opinions have changed very little over 20 years.

The WHI study had flaws.

Flaw 1:

The ages of women in the study was 50-79 all of these women were post menopausal. Some of the women were already taking HRT while others were 10-20 post menopausal. The average age of women participating in the study was 63, this is higher than the average age of menopause which is 51. Many of the women in the study were more than 10 years post menopause, and aging increases our risk for the incidence of chronic conditions, heart disease, cognitive changes, and even cancer. Women closer to the age of menopause were the ones most likely to benefit from the study, but they were not even included in the study. Many of the women in the study denied any menopausal symptoms. No perimenopausal women were included in the study. Most of the women in the study already had health issues, such as obesity, diabetes, hypertension, high cholesterol and history of or currently smoking.

Flaw 2:

There were 2 groups of women in the study. Women with a uterus (16,608) and women without a uterus (10,739). The women who had a uterus either received a placebo or both synthetic oral estrogen (conjugated equine estrogen) and synthetic oral progestin (medroxyprogesterone acetate) PremPro, derived from pregnant horses urine. The women without a uterus received either a placebo or synthetic oral estrogen (conjugated equine estrogen, Premarin) only, again derived from pregnant horses urine. When the study was stopped in 2002 it was published that estrogen was causing an increased risk of cancer but the women who received only synthetic estrogen (Premarkin) only did not have *any* increase in breast cancer incidents, they actually had a 30% decreased incidence of breast cancer and mortality from breast cancer. It was the group who had a uterus and received both synthetic estrogen and synthetic progestin (PremPro) that had the increased risk. The outcome of the study was reported erroneously, what should have made headlines was that the women taking estrogen only had a 30% decreased incidence of breast cancer and a 30% decrease in mortality.

Synthetic hormones are not used any longer for hormone replacement therapy. Body identical hormones are used. This means that the hormones used today are biologically, chemically and molecularly the same as what our bodies make, our body accepts them as its own and uses them. They are sourced from wild yams.

Flaw 3:

When the increased risk of breast cancer was reported by the media, they reported that there was a 25% increased risk of cancer and no distinction was made between the two groups (those with a uterus receiving prempro and those without a uterus receiving premarin).

Every woman has a risk of breast cancer, 4 out of every 1000 women develop breast cancer. The women in the study who were given both synthetic estrogen and synthetic progestin (PremPro) had their risk increased to 5 out of every 1000 women. According

to the media this was a 25% increased risk, this is what it called a relative risk. But when this is recalculated statistically to absolute risk it is a 0.08% increase. In statistics this is what is called as being statistically insignificant. If the absolute risk was actually 25% that would mean that 250 out of 1000 women would be developing breast cancer. In case it is not obvious, that is a huge difference between what was reported and what was factual.

In 2022 the Menopause Society issued a statement on HRT stating that “absolute risks are more useful to convey the risk and benefits in the clinical setting”. They also stressed the need for healthcare professionals who care for menopausal women to “understand the basic concepts of relative and absolute risk to communicate the potential benefits and risks of HRT”. We all have an absolute 13% risk of developing any cancer during our lives. HRT increases that absolute risk to 13.08%.

There is one more misconception regarding HRT and its safety and this one perplexes me a little when it comes to providers feeling apprehensive about prescribing HRT, but very willing to prescribe birth control. The difference is about the type of hormones used and the dose that is used.

Most women have taken birth control during their reproductive years. Most birth control is a combination of synthetic estrogen and synthetic progesterone taken orally daily, in high doses. The dose needs to be high enough to suppress ovulation, in other words trick the body into thinking that it is pregnant so it does not release an egg. A typical dose of synthetic estrogen in birth control is 20 mg, this is considered safe and effective, with no increased risk of diseases related, there is a slight risk of blood clots with this oral dose, especially if over the age of 35 and smoke but for the majority of women it is safe. There is no reported increase in breast cancer in women and teens who take oral birth control.

Hormone therapy is typically transdermal (given through the skin) bioidentical estradiol and oral bioidentical micronized progesterone. The lowest dose of estradiol in HRT is 0.025mg with the highest dose typically being 2mg. If 20mg of synthetic (birth control) estrogen is safe, why wouldn't 0.025mg of bioidentical estradiol be safe?

Synthetic hormones are chemical compounds that do not have the same molecular structure as the hormones our bodies make. Bioidentical hormones are made from naturally (yams) derived ingredients and are chemically and molecularly identical to what our bodies naturally produce. When using bioidentical hormones our body accepts them as our own and uses them. Whereas synthetic hormones have to be converted by the body into a useful form. Something that our bodies have made our entire lives does not become harmful to us just because we can no longer make them.

The other thing that makes me ponder, is many perimenopausal women will be offered birth control as a way to control their symptoms by their ObGyn or PCP/NP/PA. But these same practitioners will not prescribe body identical hormone therapy, instead they push fear about hormone therapy, but will willingly give birth control. Make it make sense. If giving a woman synthetic birth control is considered safe, why is hormone therapy that is body identical and 1/3 of the dose not safe.

What is hormone therapy?

Hormone therapy (HT) , hormone replacement therapy (HRT) , menopause hormone therapy (MHT), and bioidentical hormone replacement therapy (BHRT) are all the same thing, these terms are used interchangeably, this is supplementing the declining estradiol (our main estrogen), progesterone and testosterone that occurs with menopause using bioidentical hormones. The term bio-identical/body identical hormones means that on a molecular and chemical level the hormones are identical to what the body makes naturally. Hormone therapy is the first line treatment in managing perimenopause/menopause.

A woman does not need to wait to stop having her periods to begin hormone therapy, treatment can be started while you are still having periods and this is what is recommended by most Menopause societies (The Menopause Society, The International Menopause Society, The British Menopause Society, The Australian Menopause Society). The earlier treatment begins the less likely chronic conditions will start.

Replacing estradiol is usually done transdermally, through the skin using bioidentical estradiol via a patch, gel or spray. Estradiol is usually given through the skin, and this route of administration eliminates any risk of blood clots because it does not need to be metabolized by the liver. Oral estrogen needs to be digested and metabolized by the liver, when it is metabolized by the liver this increases the risk of blood clots, but is still a safe effective option for some women. The risk of blood clots with body identical oral estradiol is less than the risk of blood clots with oral birth control, and less than the risk of blood clots during pregnancy. Oral estradiol is safe for many women.

Replacing progesterone is usually done orally using bioidentical micronized progesterone (Prometrium). This can also be used vaginally, but most women prefer the oral method because of its sedative effects and helping with decreased anxiety, calming the brain before bed and sleep. Progesterone is an important part of hormone therapy because of its protective benefits to the uterus. If you have a uterus you *must* take progesterone. Estrogen alone can cause the endometrium (lining of the uterus) to thicken which could lead to over growth that could lead to uterine cancer. Progesterone keeps the uterine lining thin and can help with bleeding. Women who have had endometriosis and had a hysterectomy should also take progesterone to prevent any remaining endometrial tissue from growing. It is not recommended by any menopause

society to use progesterone in a cream form. The molecules are too large to be absorbed by the skin effectively to protect the uterus against overgrowth. There have been studies showing that using compounded progesterone cream with estradiol has led to cancer. Therefore only oral or vaginal use is recommended.

For women who are in perimenopause, still having periods, which means they are ovulating and have no form of birth control it is usually recommended that they take a progestin only birth control pill or have an IUD placed to prevent pregnancy. Hormone therapy is **not** birth control and supplementing your declining estrogen can lead to more regular ovulation. Women have become pregnant while taking hormone therapy so be sure to have a method of birth control if you do not wish to become pregnant

Testosterone is usually given transdermally through the skin using a gel or cream. In the United States there is not an FDA approved dose of testosterone for use in women, so many providers use a compounding pharmacy to prescribe this medication. The compounding pharmacy uses the FDA approved bioidentical testosterone that is made for men and decreases the dose to that which is appropriate for women. A typical male dose of testosterone is 25-100 mg a day, and a typical female dose of testosterone is 2.5-10mg a day. Testosterone is also a controlled substance in the United States so the provider who is prescribing will need to be licensed by the DEA in order to prescribe it. Testosterone is typically the last of the hormones to be used. If testosterone is given first most of it will be converted to estradiol. Remember both estradiol and progesterone are converted from testosterone. If getting testosterone too early in your menopause treatment, before your estradiol and progesterone are helping you to feel better, you may not get the full benefits from the testosterone treatment.

For the majority of women, the benefits of hormone therapy outweigh any risks. Most women can take hormone therapy, using body identical hormones. Again these hormones have the same chemical and molecular structure as what is made by our eggs in our ovaries and used in our brains, blood vessels, heart, skin, gut, bones, muscles, immune system, liver, bladder and vagina. Our hormones are everywhere in every part of our bodies. There is no length of time that we can be on our hormones. We do not need to stop them after 5-10 years and studies have shown that if we do, the chronic changes begin. Studies have shown that within 2 years of stopping hormone therapy any protection that you were gaining from using hormone therapy is gone. Many women decide to take them forever, I know I have. The current recommendation from The Menopause Society is that women stay on their hormone replacement therapy for life, unless they develop a contraindication.

To put it simply, the main benefits of hormone therapy is relief of symptoms and reduction of chronic diseases. Symptoms are typically resolved within a few weeks to months of starting hormone therapy. One in two women over the age of 50 will experience a fracture due to osteoporosis, 30% of women who develop a fracture die

within 1 year of that fracture. Hormone therapy reduces the risk of fractures by 60 %, reduces the risk of osteoporosis by 50%, reduces risk of developing dementia by 30-40%, a 30-50% reduction in heart disease, and a 30% reduced risk of diabetes, and colon cancer. Women who use hormone therapy have a 30% reduced all cause mortality compared to their counterparts. On average a woman taking hormone therapy lives 2-5 years longer with less chronic disease and complications than someone who does not.

Many women start HRT to help with their symptoms but most stay on it to live a life without chronic diseases that come with estrogen, progesterone and testosterone deprivation.

Look I don't expect you to just believe me, so here are some other resources to help inform and educate you about menopause and hormones.

Dr. Mary Clair Haver : thepauselife.com

Dr. Kelly Casperson: kellycaspersonmd.com,
<https://kellycaspersonmd.com/you-are-not-broken-podcast/>

Dr. Corrine Menn: drmenn.com

Dr. Avrum Blumming: estrogenmatters.com

Dr. Rachel Rubin: rachelrubinmd.com

Dr. Vonda Wright: drvondawright.com

Dr. Louise Newson: drlouisenewson.co.uk/

Tamsen Fadel: <https://www.tamsenfadal.com/>

The Menopause Society: menopause.org

The International Menopause Society: imsociety.org

The British Menopause Society: thebms.org/uk

The Australian Menopause Society: menopause.org.au

recommend reading any of the publications from the people above. I highly recommend reading Estrogen Matters by Dr. Avrum Blumming is the book that changed my mind about hormones, this book should be required reading for everyone.

If you have any questions or concerns please reach me at 724-371-0177 or email me at kelly@cornerstonewell.com

Find me on instagram @[menopause.np](https://www.instagram.com/menopause.np), or on Facebook Kelley DeFilippis

Want information? Want treatment? I am your girl, I got you.

Kelley DeFilippis, CRNP, MSN
Perimenopause/Menopause/Hormone Specialist

