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Postmenopausal Vaginal/uterine Bleeding: A Peculiar Case of Disbalanced Hormonal Therapy

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Abstract

Postmenopausal bleeding refers to any vaginal or uterine bleeding that occurs in a menopausal woman. All such bleeding is considered abnormal and requires medical attention and care as it is a possible sign of uterine (endometrial), cervical or ovarian cancer. This article presents the case of a postmenopausal woman who experienced abundant and painful vaginal/uterine bleeding as a consequence of a disbalanced hormonal therapy. After eliminating all possible causes of postmenopausal bleeding, it is concluded that the bleeding was caused by the inadvertent doubling of her Estrogen dose. After resuming the normal Estrogen dose, the bleeding was arrested and her endometrial hyperplasia may also have been normalized.

Keywords

Endometrial hyperplasia; Hormone replacement therapy; Vaginal/uterine bleeding.

Abbreviations

ACOG: American College of Obstetricians and Gynecologists; D&C: Dilation and curettage; DHEA: Dehydroepiandrosterone; DVT: Deep vein thrombosis; FDA: (U.S.) Food and Drug Administration; GUSM: Genitourinary syndrome of menopause; HRT: Hormone replacement therapy; MHT: Menopausal hormone therapy; PID: Pelvic inflammatory disease; POCS: Polycystic ovary syndrome; SEM: Selective estrogen modulators; UFE: Uterine fibroid embolization; UTI: Urinary tract infection

Drugs cited

Alendronates (bisphosphonates); Anastrozole; Aspirin; Fezolinetant; Fulvestrant; Gabapentin; Letrozole; Ospemifene (Osphena); Prasterone (Intrarosa); Progestin; Progestogen; Prometrium (Progesterone); Raloxifene; Tamoxifen (Soltamox); Toremifene; Tranexamic acid.

Diseases mentioned

Adenomyosis; Angioedema; Anovulation; Cancer (cervical, colon, endometrial, ovarian, vaginal); Celiac disease; Cervicitis; Chlamydia trachomatis; Deep vein thrombosis; Endometriosis; Fibroids (uterine); Gonorrhea; Herpes; Melasma; Pelvic inflammatory disease; Polycystic ovary syndrome; Polyps (cervical, endometrial, uterine); Porphyria; Thrombocytopenia; Thyroidism (hyper/hypo); Urea plasma vaginitis; Vaginitis; von Willebrand's disease.

Clonidine; Estradiol (Elestrin, Estrogel); Exemestane;

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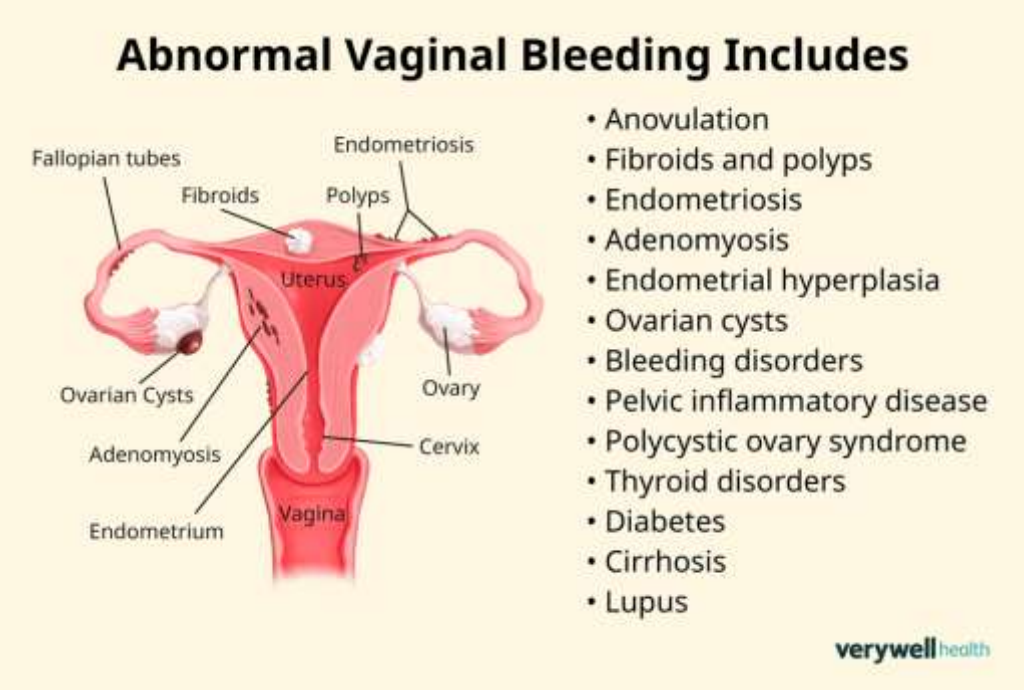
Postmenopausal bleeding refers to any vaginal or uterine bleeding that occurs in a menopausal woman. All such bleeding is considered abnormal and requires medical attention and care as it is a possible sign of uterine (endometrial), cervical or ovarian cancer.

Symptoms may include bleeding, abdominal pain, fever, chills, and headache. Bleeding can be caused by a variety of factors (see also next Section) such as hormonal imbalances; infections (cervicitis, pelvic inflammatory disease, vaginitis); structural abnormalities (adenomyosis, fibroids, polyps); bleeding disorders; injuries (trauma to the vaginal area including from sexual activity); medications (blood thinners, aspirin, tamoxifen); hyper/hypothyroid problems; and stress (which can affect hormone levels and contribute to irregular vaginal bleeding).



Julie Bang, Verywell Health

Figure 1: Illustrating some of the causes of various abnormal vaginal bleeding

In addition to careful medical examination, the following tests may be used to provide information that leads to a diagnosis: transvaginal ultrasound to see whether the endometrium (uterine lining) is thicker or thinner than normal; hysteroscopy to look for signs of abnormal bleeding; endometrial biopsy to check for signs of cancer; and cervical biopsy to evidence any signs of cancer if lesions or abnormal areas are discovered on the cervix. A primer on hormone replacement therapies is presented in Sidebar 1, whereas Sidebar 2 summarizes how abnormal vaginal bleeding is evaluated.

Treatment is based on the cause of the bleeding and includes medications, medical procedures, and eventually surgery. Thus, for vaginal atrophy: vaginal lubricants, topical hormones, or other medications to reduce vaginal dryness; for polyps or fibroids: surgery to remove them; for hormone therapy: therapy modification or suspension; for infection: medications to eliminate the infection and stop future bleeding; for thick uterus lining (endometrial hyperplasia): progestin therapy to trigger shedding of the uterine lining or removal of the uterine lining surgically during a dilation and curettage (D&C) procedure; and for endometrial cancer: surgical removal of the uterus (hysterectomy), often along with the ovaries and fallopian tubes, chemotherapy or radiation after surgery, depending on the circumstances of the diagnosis. Sidebar 3 shows how abnormal vaginal bleeding is treated.

Hormonal imbalance often involves Estrogen and Progesterone. After menopause, vaginal dryness and atrophy from a lack of, or lower, Estrogen levels can cause thinning of the vaginal and uterine lining, leading to bleeding. As a reminder, during a typical menstrual cycle, a drop in Estrogen and Progesterone levels after ovulation leads to the shedding of the uterine lining, resulting in menstrual bleeding. The hormonal imbalance can disrupt the normal shedding process, shed the uterine lining at irregular intervals or in an abnormal way, and cause longer and heavier bleeding; further, it can occur at irregular times compared to the typical cycle. Fluctuating hormone levels can also lead to bleeding between periods, especially during puberty and during perimenopause, or due to conditions like polycystic ovary syndrome (POS). Endometriosis where uterine-like tissue grows outside the uterus can also cause bleeding. In rare cases, vaginal bleeding can be a sign of cervical, uterine or other reproductive organs cancers.

In this article, we report on a peculiar case of postmenopausal vaginal/uterine bleeding due to disbalanced hormonal therapy.

Case presentation

Patient is a 72+ year old white Caucasian female who had her menopause at the very approximate age of 50. Since menopause, she was prescribed and faithfully followed a hormone replacement therapy (HRT) consisting of (a) Estradiol (Elestrin, Estrogel) 1.25 gram/actuation (0.06%) transdermal (1 gel pump depression daily on each arm approximately from wrist to shoulder) and (b) Prometrium (Progesterone) micronized 100 mg (1 capsule by mouth daily). Indications on the uses, side effects, precautions, and drug interactions of these medications, as provided by their manufacturers, are summarized in Sidebar 4.

On 03/04 and 25/2025, pursuant to a CT examination of the abdomen and pelvis for abdominal pain, flank pain, recurrent urinary tract infections (UTI), it was found that her uterus was larger than expected for a postmenopausal female (a case of hyperplasia). Subsequently, on 05/06/2025, following a complete OB/GYN workup, it was determined that hormonal levels were for Estradiol 105 pg/mL (normal range </= 144), Progesterone 1.3 (normal range < 0.1-0.2), and Testosterone 19 ng/L (normal range 12-36). While the Estrogen and Testosterone levels appeared adequate and

within normal ranges, the very high level of Progesterone did not seem to attract any special attention. On 06/03/2025, patient underwent a non-obstetric pelvic/transvaginal ultrasound, confirming the endometrial hyperplasia.

Patient was on travel in Montreal (Canada) beginning 06/09/2025. On 09/25/2025, running short of her hormone medications, she consulted a local physician and secured a renewed prescription for Estradiol and Progesterone. While the concentration (0.06%) of Estrogel was identical to her usual dose, the dose delivered by the associated pump was twice that delivered by the pump of her original prescription – an unfortunate and grave fact that was overlooked by the pharmacist and the physician … a crucial fact that was only later uncovered by the authors.

Subsequently, having developed several concerning symptoms (menstruation-like symptoms of fatigue, weakness, swollen, hard and painful lower abdomen; back pain; anxiety, depression, memory impairments; and abundant hemorrhage that lasted one day), patient consulted the following day 10/09/2025 with a third medical professional (a gynecologist). The abdomen was found to be supple, not causing any pain, and without a palpable mass; loss of older blood was noted but no active bleeding; perhaps, the presence of polyps; cancer risk was deemed weak; and no risk of serious hemorrhage could be foreseen.

Nonetheless, vaginal bleeding resumed thereafter and, on 10/20/2025, patient was admitted in Emergency at the Royal Victoria Hospital, McGill University Medical Center. Upon examination, fresh blood was observed in the vagina in moderate amount but no pus. It was also difficult to visualize the cervix. The following day, 10/10/2025, patient's laboratory results were: cancer antigen125 (result 25 U/mL, normal range 0-35); All of the following five tests were found to be low: COAG profile: International normalization ratio (0.81, normal range: 0.88-1.12); prothrombin time (11.6 s, normal range: 12-4-15.0); red blood cell count (3.63, normal range: 10^12/L); hemoglobin (118 /L, normal range: 120-160); and hematocrit (0.34 L/L, normal range: 0.36-0.48). A transabdominal and transvaginal ultrasound scan found the uterus to be normal in size and contour with a thickened endometrial lining of 14.5 mm with no vascularity in the endometrium. Both ovaries were normal, atrophic in size as expected, and no fluid in the pelvis. Patient was discharged on 10/22/2025 with no indication as to the cause of the bleeding but a biopsy was nonetheless recommended.

Patient returned to her country of residence on 11/01/2025. By then, all bleeding had stopped and most other symptoms had vanished except for some residual swollen and hardened lower abdomen and persistent memory impairments. On 11/07/2025, patient was again seen by another gynecologist. The final pathology came back for the biopsy performed on the lining of her uterus. It was benign with no cancer or pre-cancer present. On 11/25/2025, the results of yet another pelvic sonogram showed the endometrial stripe had returned to normal (<4 mm).

Prior to discussing the case under consideration, let us review the several known possible causes of abnormal vaginal bleeding.

Known possible causes of abnormal vaginal bleeding

There are many causes of vaginal bleeding. Some of the more common causes are as follows:

Fertility and reproduction factors (not applicable, but indicated for completeness)

1. Pregnancy.
2. Ectopic pregnancy.
3. Miscarriage (pregnancy loss before the 20th week of pregnancy).
4. Fluctuating hormone levels.

5. Perimenopause.
6. Random ovulatory cycles.
7. Sexual intercourse.
8. Vaginal atrophy a.k.a. genitourinary syndrome of menopause (GUSM).

Cancers and precancerous conditions

1. Vaginal cancer.
2. Uterine sarcoma.
3. Ovarian cancer.
4. Cervical cancer
5. Endometrial cancer.
6. Endometrial hyperplasia.

Endocrine system factors

1. Hypothyroidism (underactive thyroid).
2. Hyperthyroidism (overactive thyroid).
3. Withdrawing bleeding, a side effect of menopausal hormone therapy.

Hormones

1. Anovulation (a disruption or failure of the ovaries that can be due to a disorder of the ovaries themselves or from a problem in how the brain is signaling the glands that control ovulation).
2. Hormonal birth control pills (some people experience breakthrough bleeding while taking oral contraceptives.
3. Polycystic ovary syndrome (POCS) – a type of hormonal imbalance that causes irregular periods, weight gain, acne, and excess hair growth.

Infections

1. Cervicitis.
2. Chlamydia trachomatis.
3. Endometritis.
4. Gonorrhea.
5. Herpes.
6. Pelvic inflammatory disease (PID).
7. Urea plasmavaginitis.
8. Vagnitis.

Medical conditions

1. Celiac disease.
2. Obesity.
3. Severe systemic disease (kidney or liver disease).
4. Thrombocytopenia (a low red blood cell count).
5. von Willebrand's disease and other clotting disorders.
6. Vitamin K deficiency (which helps the body make blood-clotting factors).

Medications and devices

1. Birth control pills.
2. Forgotten (also called retained) tampons.
3. Intrauterine device (IUD).
4. Tamoxifen (Soltamox).
5. Withdrawal bleeding, a side effect of menopausal hormone therapy.

Non-cancerous growths and other uterine conditions

1. Adenomyosis (when tissue that lines the inside of the uterus grows into the wall of the uterus).
2. Cervical polyps.
3. Endometrial polyps.
4. Uterine fibroids (benign growths in the uterus).
5. Uterine polyps.

Trauma

1. Blunt trauma or penetrating injury to the vagina or cervix.
2. Past obstetric or gynecological surgery, including cesarean sections.
3. Sexual abuse.

Pregnancy complications (not applicable, but included

for completeness)

1. Ectopic pregnancy: A pregnancy in which a fertilized egg grows outside the uterus, usually in the fallopian tubes.
2. Placental abruption: Detachment of the placenta from the wall of the uterus.
3. Placenta brevia: When the placenta lies low in the uterus and partly or completely covers the cervix.
4. Preterm labor: Labor that occurs before the 37th week of pregnancy.
5. Miscarriage: Loss of pregnancy before the 20th week.

A careful consideration of each of the above possible causes of abnormal vaginal/uterine bleeding reveals that none of them applies to the case presented. The cause under investigation must lie elsewhere.

Discussion

Initially, and before any inadvertent change in the Estrogen therapy, the patient's endometrial hyperplasia (uterus lining thickness: 1.45 mm - larger than expected for a postmenopausal woman) had been noted but no remedial action had been undertaken. The very high Progesterone dose did not seem to attract any special attention as it remained unaltered for the past 22+ years. Since progestin therapy is usually employed to trigger shedding of the uterus lining, one wonders if that therapy had been effective in the patient's case or/and if her endometrium was so thick that it still remained hyperplasic after this long time period.

The hormonal imbalance presented in the previous section in the form of an inadvertent doubling of the Estrogen dose during the time period (09/25/2025-10/09/2025), had disrupted the normal shedding process (if any) and caused a longer and heavier bleeding. One would normally expect such an imbalance to disrupt the normal shedding process, shed the uterine lining at irregular intervals or in an abnormal way, and cause longer and heavier bleeding.

Upon return to the usual HRT dose, the endometrial stripe had returned to the normal thickness of 0.4 mm and the bleeding had been stopped in its track.

The authors believe that the doubled Estrogen dose change during the period (09/25/2025-10/09/2025) was probably responsible for the bleeding. Unexpectedly, it may also have caused the endometrial stripe to return to normal (<4 mm) but this remains to be independently confirmed.

The authors suggest that the patient should consult with an estrogen specialist physician to review her current hormonal therapy for the following purposes: (a) to evaluate the appropriateness and benefits/risks ratio; (b) confirm the thickness of her endometrium; and (c) investigate any remedial action regarding the low test values identified (COAG profile, International normalization ratio, prothrombin time, red blood cell count, hemoglobin, and hematocrit.

Conclusions and take-aways

- Hormone replacement therapy is highly effective for menopause but requires a personalized discussion with a menopause specialist doctor to weigh specific benefits (symptom relief, bone health) against risks (cancer, clots). It also requires to be tailored to the patient and to be followed to ascertain that the benefits still outweigh the risks.

- The multitude of known causes for abnormal vagina/uterine bleeding have been outlined and classified under the following categories: cancers and precancerous conditions; endocrine system factors; hormones; infections; medical conditions; medications

and devices; non-cancerous conditions; uterine conditions; and trauma.

- The inadvertent alteration in the hormone replacement regimen (in the form of a doubling of the Estrogen dose) was responsible for the abrupt onset of vaginal/uterine bleeding.

- The rebalancing of the hormone therapy (at least the resumption of the initial Estrogen dose) appears to have had the beneficial effect of normalizing the endometrium thickness – but this remains to be independently confirmed.

Sidebar 1 - On hormone replacement therapies

Hormone Replacement Therapy (HRT) or Menopausal Hormone Therapy (MHT) is a medical treatment to replace hormones the body stops making, thus relieving the symptoms of perimenopause and menopause like hot flashes, vaginal dryness and mood swings, thereby improving the quality of life and helping to prevent osteoporosis. HRT consists primarily of Estrogen and Progesterone that are available as pills, patches, gels, rings, or creams. The therapy offers significant benefits but carries risks like a slightly heightened risk of breast cancer and thrombosis, making a personalized risk-benefit discussion with a doctor crucial, especially considering age and time since menopause.

How HRT works?

HRT works in two complementary ways:

• It replaces hormones: It adds Estrogen and often Progestogen (a group of Progesterone-like medicines) in the body.
• It protects the uterus: Progestogen is added for those with a uterus to prevent abnormal growth of the uterine lining caused by Estrogen.

Types of HRT

There are four types of HRT:

• **Whole-body hormone therapy, also called systemic therapy.** Systemic Estrogen comes as a pill, skin patch, ring, gel, cream or spray for common symptoms. It typically has more Estrogen than other hormone therapies. Systemic Estrogen is absorbed by the whole body and can be used to treat many common symptoms of menopause.
• **Low-dose vaginal therapy:** Low-dose vaginal Estrogen comes as a cream, tablet or ring. It usually has less Estrogen than systemic therapy, reducing the amount of Estrogen absorbed by the body. Because of this, low-dose vaginal/urinary Estrogen usually is used to treat only the vaginal and urinary symptoms of menopause. This is because taking Estrogen without a Progestogen can thicken the uterus lining, which can increase the risk of endometrial cancer.
• **Combined HRT:** Estrogen + Progestogen (sequential or continuous).
• **Estrogen-only:** For those without a uterus (after hysterectomy).

Therapeutic benefits

• Relieves hot flashes, night sweats, sleep issues, vaginal dryness.
• Prevents bone loss and reduces osteoporosis risk and broken bones.
• May offer cardiovascular protection and reduce cognitive decline if started early.

Who can benefit from HRT?

The benefits of HRT may outweigh the risks if one starts treatment before age 60, or within 10 years of menopause. One also may benefit from HRT if healthy

and:

• **Has moderate to severe hot flashes.** Systemic Estrogen is the most effective treatment for hot flashes and night sweats.
• **Has other symptoms of menopause.** Estrogen can ease vaginal symptoms of menopause, such as dryness, itching, burning and pain during intercourse. It also may help bladder symptoms of menopause, such as urinating often, having a strong urge to urinate, leaking, burning and urinary tract infections.
• **Needs to prevent bone loss or broken bones.** Systemic Estrogen helps protect against the bone-thinning disease called osteoporosis. But healthcare professionals usually recommend other medicines to treat osteoporosis. Estrogen therapy may help if other treatments do not work or cannot be taken.
• **Has early menopause or low Estrogen.** If one goes through menopause or has ovaries removed before age 45, or ovaries stop working before age 40, one may benefit from HRT. That is because one would have low Estrogen for a longer time than if going through menopause at a typical age. Estrogen therapy may help lower the risk of some health conditions caused by low Estrogen, such as osteoporosis, heart disease, dementia and mood changes.

Side effects, risks and other considerations

Potential side effects of HRT include:

• Vaginal spotting or bleeding, which usually stops within 6 months.
• Temporary breast soreness.
• Bloating (fluid retention).
• Headaches.

The risks depend on:

• Health history. Personal medical history and risk of cancer, heart disease, stroke, blood clots, liver disease and osteoporosis also are factors that can affect the risks of menopause hormone therapy.

• Age and time since menopause.
• The type of hormone therapy, that is on whether one takes Estrogen alone or with a Progestogen. The dose and type of Estrogen also can affect risk.
• Whether the medicine is taken by mouth or applied on the skin.
• The dose of medicine.
• How long the medicine is taken.

For best results, HRT should be tailored to each person, reviewed regularly with the attending healthcare professional to make sure the benefits still outweigh the risks.

The main risks are:

• **Blood clots (thrombosis):** A slightly increased risk.

• **Breast cancer:** Combined HRT carries a small, manageable risk.

• **Deep vein thrombosis (DVT):** Combined hormone therapy and Estrogen-only therapy are associated with a small risk of stroke and blood clots from DVT. This risk increases with age and other factors, including heart disease, kidney disease, and obesity. Patches, sprays, and rings may pose less risk than pills taken by mouth.

• **Endometrial cancer.**

• **Uterine cancer:** Estrogen-only HRT increases risk for those with a uterus (hence, Progestogen).

• **Gallbladder disease:** There is a small increased risk of gallbladder disease associated with Estrogen therapy with or without Progestin. The risk is greatest with pills.

• **Heart disease.**

• **Stroke.**

Many of these risks are related to the health and family history of the individual.

How can one reduce the risks of HRT?

Strategies to reduce the risks of MHT include:

• **Finding the best product type:** Whereas Estrogen can be taken as a pill or used as a patch, gel, vaginal cream, or slow-releasing suppository or a ring placed in the vagina, if there are only vaginal menopause symptoms, Estrogen in a low-dose vaginal cream, tablet or ring is usually a better choice than an oral pill or a skin patch.

• **Reducing the amount of medicine taken:** Taking the lowest dose of Estrogen that helps symptoms and only for as long as needed. For an individual younger than age 45, one needs enough Estrogen to provide protection against the long-term health effects of low Estrogen. If having lasting menopause symptoms that hurt the quality of life, a longer treatment may be recommended.

• **Getting regular follow-up care:** To ensure the benefits of HRT continue to outweigh the risks. One also should continue to have regular screenings, such as mammograms, blood pressure measurement, and cervical cancer screening.

• **Making healthy lifestyle choices:** Getting daily physical activity and exercise, eating a healthy diet, keeping a healthy weight, not smoking, limiting alcohol and managing stress. Further, managing ongoing health conditions, such as high cholesterol or high blood pressure.

• **If still having the uterus and taking Estrogen:** Taking a Progestogen and choosing the best way to take these hormones based on what works and has the fewest side effects.

What can one do if not taking HRT?

If one cannot take HRT, one may be able to manage hot flashes with:

• Weight loss.
• Cognitive behavioral therapy.
• Clinical hypnosis.

There also are many non-hormone prescription medicines that may help manage hot flashes.

For vaginal concerns such as dryness or painful intercourse, a vaginal moisturizer or lubricant may help. One also might ask about the prescription medicine Ospemifene (Osphena) or Prasterone (Intrarosa). These medicines may help with painful intercourse and other vaginal and bladder symptoms of menopause.

The bottom line: HRT is not all good or all bad

To find out if HRT is a good option, one can consult with a healthcare professional about symptoms and health risks and a certified menopause expert. Or check with a professional organization such as The Menopause Society.

As researchers learn more about HRT and other menopause treatments, recommendations may change. But if one has menopause symptoms that disrupt sleep or get in the way of daily life, it is worthwhile to talk to a healthcare professional about treatment options.

If one is already taking HRT, check in with a healthcare professional regularly to reassess the need for treatment.

How does HRT affect the risk of cancer?

• **Endometrial cancer:** Estrogen-only therapy causes the lining of the uterus to thicken, which increases the risk of endometrial cancer. Adding Progestin decreases

this risk.

• **Breast cancer:** Combined hormone therapy is associated with a small increased risk of breast cancer. Women with a history of hormone-sensitive breast cancer should try nonhormonal therapies first to treat menopause symptoms.

• **Colon cancer:** Combined hormone therapy also may reduce the risk of colon cancer.

How does HRT affect the risk of cardiovascular disease?

Combined hormone therapy is associated with a small increased risk of heart attack for older women. This risk may be related to age, existing medical conditions, and when a woman starts taking hormone therapy.

Some research suggests that combined hormone therapy may protect against heart attacks in women who start combined therapy within 10 years of menopause and who are younger than 60 years. This benefit may be even greater for women taking Estrogen alone.

More research is needed on this topic. At this time, combined hormone therapy should not be used solely to protect against heart disease.

What are the alternatives to HRT?

Many women are interested in options other than hormone therapy to treat menopause symptoms. Alternatives include:

• Over-the-counter vaginal moisturizers and lubricants.

• Nonhormonal medications, including:

o Antidepressants: to relieve hot flashes.

o Selective Estrogen modulators (SEMs): to relieve hot flashes or pain during sex

o A daily vaginal insert called dehydroepiandrosterone (DHEA): to relieve pain during sex.

o A seizure medication (called Gabapentin) and a blood pressure medication (called Clonidine): to reduce hot flashes and ease sleep problems.

• Plant and herbal supplements, including some soy products.

It also is important to know that few plant and herbal supplements have been studied for safety or effectiveness.

What about bioidentical hormones?

Bioidentical hormones come from plant sources. They are like hormones produced by the body. They include commercially available products that are approved by the (U.S.) Food and Drug Administration (FDA), such as oral Progesterone, as well as compounded drugs. A compounded drug is made by a compounding pharmacist using a health care professional's prescription.

Compounded drugs are not regulated by the FDA. Customized compounded hormones pose more risk because they vary in strength and purity. That means one can take too little or too much of a hormone without knowing it. There also are safety concerns about a kind of compounded drug known as pellet therapy.

There is no scientific evidence that compounded hormones are safer or more effective than standard hormone therapy. The American College of Obstetricians and Gynecologists (ACOG) recommends FDA-approved hormone therapy over compounded hormone therapy.

Are there other uses of HRT?

Hormone medications may be prescribed for reasons other than menopause. They may be used:

• To prevent osteoporosis.

• To initiate puberty in adolescents with primary

amenorrhea.

• As part of a gender transition.

• To treat some types of cancer or to relieve some cancer symptoms.

• To treat infertility in certain situations.

Sidebar 2 - How is abnormal vaginal bleeding evaluated?

To determine the cause of abnormal bleeding, a physician will perform a physical exam, including a pelvic exam, and may perform one or more of the following:

1. Blood tests, including a blood clotting profile.
2. Hormone tests.
3. Tests for sexually transmitted diseases.
4. Pregnancy test.
5. Thyroid function tests.
6. Ultrasound of the pelvis to evaluate the uterus, cervix, ovaries, fallopian tubes, and bladder.
7. A transvaginal ultrasound test in which a small hand-held device is inserted into the vagina, produces pictures of the endometrium, or the lining of the uterine cavity, and the walls of the uterus, called the myometrium, as well as the ovaries.
8. Sonohysterography, or ultrasound of the uterus, which provides a more in-depth evaluation of the uterine cavity. In this minimally procedure, a saline solution is injected into the uterine cavity to help visualize and measure the endometrium and to look for polyps or a mass of tissue. This exam may also involve an injection of air to help determine if the fallopian tubes are open.
9. Pelvic MRI is used after ultrasound to better visualize fibroids, cancer, or retained products of conception.
10. Hysteroscopy involves inserting into the uterus a narrow lighted tube with an optical instrument or viewing device on the end to allow the physician to look for fibroids, polyps or other abnormalities.
11. Endometrial biopsy is used to remove and examine a small sample of tissue from the endometrium under a microscope to diagnose cancer or other causes of abnormal bleeding. The procedure, which may be performed as an office procedure alone or in conjunction with hysteroscopy, involves a suction or cutting device that removes a small piece of tissue from the uterus.

Sidebar 3 - How is abnormal vaginal bleeding treated?

Treatment for abnormal vaginal bleeding depends on the underlying cause, and may include:

1. Medication.

2. Birth control pills or hormone-releasing intra-uterine devices.

3. Uterine fibroid embolization (UFE). In this minimally invasive procedure guided by an x-ray camera called a fluoroscope, tiny particles are injected through a catheter into uterine arteries that are delivering blood to fibroids, blocking blood flow and causing the fibroids to shrink.

4. Endometrial ablation. Guided by a narrow lighted tube with a viewing device on the end (called a hysteroscope), the lining of the uterus is destroyed using a laser or other specialized instruments that produce heat, freezing, microwave energy or electrical currents.

5. Myomectomy, the surgical removal of fibroids.

6. Dilation and curettage (D&C). A procedure in which endometrial tissue is gently scraped or suctioned from the uterus.

7. Hysterectomy. A surgical procedure in which the uterus is removed.

Sidebar 4 – Specification sheets for hormone replacement medications

Estradiol

Uses: Estrogen is absorbed through the skin and enters the blood stream. It is used to help reduce certain symptoms of menopause ("hot flashes"). Certain brands may also help to reduce vaginal symptoms of menopause (such as vaginal dryness/burning/itching). These symptoms are caused by the body making not enough Estrogen. If using this medication to treat symptoms only and around the vagina, products applied directly inside the vagina should be considered before medications that are taken by mouth, absorbed through the skin, or injected. When prescribed by a health care professional, Estrogen may be prescribed for bone loss (osteoporosis) after menopause. However, there are other medications (such as Raloxifene, Bisphosphonates including Alendronates) that are also effective for this purpose, may be safer, and should be considered before Estrogen treatment. This medication should not be applied in or around the vagina.

Side effects: Nausea/vomiting, bloating, breast tenderness, headache or weight changes may occur. Serious side effects include nausea/vomiting that does not stop, mental/mood changes (such as depression, memory loss), breast lumps, unusual vaginal bleeding (such as spotting, breakthrough bleeding, prolonged/recurrent bleeding), increased or new vaginal irritation, itching/odor/discharge, severe stomach/abdominal pain, yellowing eyes/skin, dark urine, swelling hands /ankles/feet, increased thirst/urination. Serious (sometimes fatal problems from blood clots) side effects are rare (such as heart attack, stroke, blood clots in the lungs or legs, chest/jaw/left arm pain). The following occurrences require immediate medical attention: unusual sweating, sudden/severe headaches, weakness on one side of the body, confusion, trouble speaking, sudden vision changes, pain/swelling/warmth in the groin/calf, shortness of breath/rapid breathing, sudden dizziness/fainting. A very serious allergic reaction (rash, itching/swelling especially of the face/tongue/throat, severe dizziness, trouble breathing) is rare. The medication may also cause blotchy dark areas on the face and skin (melasma), which may worsen with sunlight.

Precautions: Estrogen is not to be used in certain conditions especially of: vaginal bleeding of unknown cause, certain cancers (such as breast cancer, cancer of the uterus/ovaries), blood clots, stroke, heart disease (such as heart attack), liver disease, kidney disease, family medical history (especially breast lumps, cancer, blood clots), family or personal history of a certain swelling disorder (angioedema), blood clotting disorders (such as protein C or protein S deficiency), high blood pressure, diabetes, high cholesterol/triglycerides levels, obesity, lupus, underactive thyroid (hypothyroidism), mineral imbalance (low or high level of calcium in the blood), a certain hormone problem (hypoparathyroidism), uterus problems (such as fibroids, endometriosis), gallbladder disease, asthma seizures, migraine headaches, mental/mood disorders (such as dementia, depression), a certain blood disorder (porphyria).

Drug interactions: Drug interactions may change how the medication works or increases the risk for serious side effects. Products that may interact with Estradiol include aromatase inhibitors (such as Anastrozole, Exemestane, Letrozole), Fezolinetant, Fulvestrant, Ospemifene, Raloxifene, Tamoxifen, Toremifene, Tranexamic acid. Estradiol may also interfere with certain laboratory tests, possibly causing false test results.

Overdose: Symptoms of overdose may include severe nausea/vomiting, unusual vaginal bleeding.

Prometrium

Uses: In combination with Estradiol, to reduce menopause symptoms (such as 'hot flashes') and to reduce the risk of cancer of the uterus.

Side effects: Nausea, bleeding, breast tenderness, headache, change in vaginal discharge, mood swings, blurred vision, dizziness or drowsiness. Serious side effects may include nausea, vomiting that does not stop, unusual vaginal bleeding (such as spotting, breakthrough bleeding), mental/mood changes (depression, memory loss), swelling of the hands/feet, frequent burning/painful urination, breast lumps, dark patches on the skin or face (melasma), yellowing eyes/skin, stomach/abdomen pain, dark urine, unusual tiredness. When used with an estrogen product, may rarely cause very serious (possibly fatal) problems from blood clots (such as heart attack, stroke, blood clots in the lungs, legs, or eyes). May also cause chest/jaw/left arm, weakness on one side of the body, trouble speaking, sudden vision changes, confusion, sudden/severe headaches, sudden dizziness/fainting, shortness of breath/rapid breathing, pain/swelling/warmth in the groin/calf, unusual sweating. A very serious allergic reaction including rash, itching/swelling (especially of the face/tongue/throat), severe dizziness, trouble breathing is rare.

Precautions: Alcohol or marijuana may compound dizziness/drowsiness.

Drug interactions: Drug interactions may change how the medication works or increases the risk for serious side effects and may also interfere with certain laboratory tests, possibly causing false test results.

Overdose: Symptoms of overdose may include severe nausea and vomiting.

References

1. Bulun SE and Babayev E (2025). "Physiology and pathology of the female reproductive axis". In: Melmed S, Auchus, RJ, Goldfine AB, Rosen CJ, Kopp PA, eds. Williams Textbook of Endocrinology. 15th ed. Philadelphia, PA: Elsevier; 2025: chapter 15.
2. Haver MC (2024). "The new menopause: Navigating your path through hormonal change with purpose, power, and facts", Rodale Books, Random House, pp 310.
3. Fymat AL (2017). "On mammography and hormone replacement therapy", Interventions in Gynecology & Women's Healthcare (Editorial). 1(1):1-4. doi: 10.32474/IGWHC.2017.01.000101.
4. Fymat AL (2018). "On medical avatars in the diagnosis and treatment of endometriosis", Interventions in Gynecology & Women's Healthcare (Editorial) 2(2):1-3. doi:10.32474/IGWHC.2018.-02.000133.
5. Ryntz T and Lobo RA (2022)."Abnormal uterine bleeding: etiology and management of acute and chronic excessive bleeding". In: Gershenson DM, Lentz GM, Valea FA, Lobo RA, eds. Comprehensive Gynecology. 8th ed. Philadelphia, PA: Elsevier; 2022: chapter 26.
6. Seller RH and Symons AB (2018). "Menstrual irregularities". In: Seller RH, Symons AB, eds. Differential Diagnosis of Common Complaints. 7th ed. Philadelphia, PA: Elsevier; 2018: chapter 20.