Patient education: Menopausal hormone therapy (Beyond the Basics)

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INTRODUCTION

Menopause is defined as the time in a woman's life, usually between age 45 and 55 years, when the ovaries stop producing eggs (ovulating) and menstrual periods end. After menopause, a woman can no longer get pregnant.

Menopause does not happen suddenly; most women experience several years of changes in their menstrual periods before they stop completely. During this time (also called the menopausal transition or "perimenopause"), many women also start to have menopausal symptoms. These result from declining levels of estrogen in the body and can include hot flashes, night sweats, mood changes, sleep problems, and vaginal dryness. A woman is said to have completed menopause once she has gone a full year without having a period. The **average** age for a woman to stop having periods is 51 years. (See "Patient education: Menopause (Beyond the Basics)".)

During the transition to menopause, the ovarian production of estrogen decreases by more than 90 percent. The decrease in ovarian estrogen production is what leads to the typical symptoms of hot flashes, night sweats, and vaginal dryness. Some women experience an increase in anxiety and depression during this transition, especially those who have previously experienced these symptoms.

Sleep problems are also common at this time. There are a number of options available to ease the symptoms of menopause, including estrogen and nonhormonal options. This article explains how estrogen works and discusses the risks and benefits of menopausal hormone therapy. Information about non-estrogen treatment options is available separately as well. (See "Patient education: Non-estrogen treatments for menopausal symptoms (Beyond the Basics)".)

WHAT IS MENOPAUSAL HORMONE THERAPY?

Menopausal hormone therapy is the term used to describe the two hormones, estrogen and progestin, that are given to relieve bothersome symptoms of menopause. Estrogen is the hormone that relieves the symptoms. Women with a uterus must also take progestin (a progesterone-like hormone) to prevent uterine cancer. This is because estrogen alone can cause the lining of the uterus to overgrow (potentially leading to uterine cancer).

Women who have had a hysterectomy do not have a uterus and cannot develop uterine cancer. These women are treated with estrogen alone.

Types of estrogen — Estrogen is available in many different forms. For hot flashes, it can be taken as a transdermal patch (worn on the skin), an oral pill, or a "ring" or tablet that is inserted into the vagina. There are also creams and sprays that can be put on the skin.

In the past, most women were prescribed conjugated estrogens, but now the preferred estrogen is estradiol. The standard dose of oral estradiol is 0.5 or 1.0 mg daily by mouth. Lower doses seem to have fewer side effects and probably help to minimize risks. Estradiol is the estrogen that is identical to the one the ovary makes throughout reproductive life. Estradiol can be given by mouth, skin patch, or vaginal ring.

Estrogen patch — Many experts now prefer treating women with the estradiol patch rather than estrogen pills (because it is associated with a lower risk of blood clots than estrogen pills). A combination estrogen and progestin patch is also available. Some patches need to be replaced every few days, while others are only replaced once a week.

Estrogen patches work as well as estrogen pills to increase bone density and treat menopausal symptoms. Women with a uterus who use an estrogen patch must also take a progestin to decrease the risk of uterine cancer. (See 'Types of progestin' below.)

Estrogen pill — There are many types of estrogen pills. Estradiol derived from plant sources and is the same estrogen that the ovary makes before menopause. Another commonly used estrogen, called Premarin (conjugated estrogen), is made from the urine of pregnant horses (mares). All types of estrogen can help to relieve menopausal symptoms.

Combination pills that include both estrogen and progestin are available. (See 'Types of progestin' below.)

Low-dose birth control pill — Very low-dose birth control pills are a good option for women in their 40s who have bothersome hot flashes, irregular bleeding, and who still need a reliable form of birth control. Extreme caution should be used for women over 40 years who are also obese because of the higher risk of blood clots. Birth control pills are generally **not** recommended for postmenopausal women, because the dose of estrogen is higher than needed to relieve hot flashes. (See "Patient education: Hormonal methods of birth control (Beyond the Basics)" and "Patient education: Menopause (Beyond the Basics)", section on 'Menopause and birth control'.)

Vaginal estrogen — Women with vaginal dryness can also be treated with very low doses of estrogen that treat the dryness but not hot flashes (because the dose is too low to get into the bloodstream). Vaginal estrogen comes in a cream, vaginal ring, or vaginal estrogen tablets. The low-dose vaginal estrogens do not usually require the use of a progestin pill. Vaginal estrogen used to treat dryness is discussed in a separate article. (See "Patient education: Vaginal dryness (Beyond the Basics)".)

Types of progestin — Postmenopausal women with a uterus who are treated with estrogen alone have an increased risk of developing uterine cancer and hyperplasia (a precursor to uterine cancer). Taking a second hormone, progestin, minimizes this risk. (See "Patient education: Endometrial cancer diagnosis and staging (Beyond the Basics)".)

- **Oral progestins** – One commonly prescribed progestin pill is medroxyprogesterone acetate. Other types of synthetic progestin pills (norethindrone, norgestrel) are also available.

  Many experts now treat the majority of their menopausal patients with natural progesterone rather than synthetic progestins. Natural progesterone has no negative effect on lipids and is a good choice for women with high cholesterol levels. In addition, natural progesterone might have other advantages when compared with medroxyprogesterone acetate.

- **Intrauterine progestin** – An intrauterine device (IUD) is a form of birth control; one type, the levonorgestrel IUD (brand names: Mirena, Liletta, Kyleena, Skyla), releases progestin to prevent pregnancy. In some countries, these types of IUDs (using a lower dose of levonorgestrel) are used in menopausal women taking estrogen to minimize the risk of developing uterine cancer. The IUD is not currently approved in the United States for use in menopausal women; however, if you already have one when you enter perimenopause, your doctor may suggest that you keep it in until after menopause is complete.

"Bioidentical" products — Many women have turned to compounded "bioidentical" hormone therapy as an alternative to conventional hormones for treating symptoms of menopause. "Bioidentical" means that the hormones used for therapy are identical in molecular structure to the hormones produced by the ovaries. "Compounded" means the preparation is mixed in a special compounding pharmacy in order to create a customized dose of hormones in the form of pills, creams, or vaginal suppositories.

The quality of these custom compounded products is **not** regulated by the US Food and Drug Administration (FDA), and the dose of hormones can vary from batch to batch. For these reasons, expert groups caution against using them. However, in 2019, an estrogen-progestin pill that is also bioidentical became available; this preparation is not compounded and **is** approved by the FDA, meaning that it has documented safety and efficacy. This might be a good option for women who prefer not to use more conventional hormone therapies.

RISKS AND BENEFITS OF HORMONE THERAPY

The Women's Health Initiative (WHI) was a large study designed to find out if hormone therapy would reduce the risk of heart attacks (coronary heart disease [CHD]) after menopause. The study found that taking estrogen-progestin in combination actually increases the risk of heart attacks, breast cancer, blood clots, and strokes in older postmenopausal women but not in younger postmenopausal women. (See "Menopausal hormone therapy: Benefits and risks".)

The results of the estrogen-only study were different. Women who took estrogen alone had a small increase in the risk of stroke and blood clots, but there was no increased risk of heart attacks or breast cancer.

Heart attacks — The risk of having a heart attack related to use of hormone therapy appears to depend on your age. There is **no** increased risk of heart attacks related to hormone therapy in women who:

- Became menopausal less than 10 years before starting hormones
  or
- Were age 50 to 59 years when they took hormone therapy

Other studies since the WHI also report that hormone therapy does **not** increase heart attack risk in younger women; some suggest it might even lower the risk slightly. In the WHI, women who become menopausal more than 10 years ago or over age 60 years were at increased risk of having a heart attack related to hormone therapy.

Breast cancer — There is a small increased risk of breast cancer in women who took combined estrogen-progestin therapy but not in women who took estrogen alone. Experts think that it takes approximately 10 years or more of estrogen use (alone) before the risk goes up but only five to six years if you take both hormones. After that, the risk will continue to go higher if you keep taking estrogen. This is discussed in detail separately. (See "Menopausal hormone therapy and the risk of breast cancer".)

Osteoporotic fracture — The risk of breaking a bone at the hip or spine because of osteoporosis is lower in women who take estrogen-progestin or estrogen alone. However, hormone therapy is not recommended to prevent or treat osteoporosis, because there are bone medicines (called bisphosphonates) that have fewer serious risks. (See "Patient education: Osteoporosis prevention and treatment (Beyond the Basics)".)

Dementia — Among the oldest studied in the WHI, there was no improvement in memory or thinking with either estrogen alone or with combined estrogen-progestin but there was an increase in the risk of developing dementia. No increase in dementia risk was seen in the younger menopausal women in the WHI or in other studies.

Some experts think that estrogen treatment might be helpful for preventing dementia if you take it in the earliest years after menopause (although this is not proven); taking it many years after menopause seems to be harmful.

Depression — Many women experience anxiety and/or depression during the transition to the menopause. Some studies show that estrogen treatment helps improve mood and decrease depression. However, some women need to be treated with both estrogen and an antidepressant to feel completely better. Once women reach their postmenopausal years and their hormones are stable, they usually begin to feel better. (See "Patient education: Depression in adults (Beyond the Basics)".)

Sleep problems — Many perimenopausal and postmenopausal women have sleep problems. Sometimes this is because they have hot flashes at night that interfere with sleep (night sweats). However, women can have trouble sleeping even if they don't have hot flashes. This can be due to disorders like restless leg syndrome and sleep apnea. Estrogen treatment is very effective for improving sleep in women with night sweats.

WHO SHOULD TAKE HORMONE THERAPY?

The most common reason for taking hormone therapy is to treat bothersome menopausal symptoms, such as hot flashes or vaginal dryness. Most experts agree that hormone therapy is safe for healthy

women who have menopausal symptoms.

Most experts recommend that you taper and stop your hormone therapy after four or five years to avoid any increased risk of breast cancer. However, this can be a challenge for many women because the average duration of hot flashes is approximately seven to eight years.

If you are using a patch, your doctor or nurse can give you a lower-dose patch to help you taper the dose. If you are taking pills, one way to do this is to skip one pill per week at first, then continue to gradually decrease the number of pills per week until you are no longer taking any.

If menopausal symptoms return as you lower your dose of hormones, you can try hormone therapy alternatives. Some women have to go back on hormone therapy for a while. (See "Patient education: Non-estrogen treatments for menopausal symptoms (Beyond the Basics)".)

Who should avoid hormones? — Hormone therapy is not recommended for women with the following:

- Current or past history of breast cancer
- Coronary heart disease
- A previous blood clot, heart attack, or stroke
- Women at high risk for these complications

Women with breast cancer — Women with breast cancer often experience early menopause due to breast cancer treatments. In these women, estrogen or hormone therapy (by mouth or patch) is **not** recommended. The hormones could increase the chance of the cancer coming back.

Alternatives to hormone therapy are available and are often effective in relieving bothersome menopausal symptoms. These alternatives are discussed in detail in a separate article. (See "Patient education: Non-estrogen treatments for menopausal symptoms (Beyond the Basics)".)

WHERE TO GET MORE INFORMATION

Your health care provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our website (www.uptodate.com/patients). Related topics for patients, as well as selected articles written for health care professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

The Basics — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

Patient education: Menopause (The Basics)
Patient education: Sex problems in women (The Basics)
Patient education: Atrophic vaginitis (The Basics)

Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

Patient education: Menopause (Beyond the Basics)
Patient education: Non-estrogen treatments for menopausal symptoms (Beyond the Basics)
Patient education: Hormonal methods of birth control (Beyond the Basics)
Patient education: Vaginal dryness (Beyond the Basics)
Patient education: Endometrial cancer diagnosis and staging (Beyond the Basics)
Patient education: Gallstones (Beyond the Basics)
Patient education: Osteoporosis prevention and treatment (Beyond the Basics)
Patient education: Screening for colorectal cancer (Beyond the Basics)
Patient education: Depression in adults (Beyond the Basics)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

Overview of androgen deficiency and therapy in women
Clinical manifestations and diagnosis of genitourinary syndrome of menopause (vulvovaginal atrophy)
Estrogen and cognitive function
Menopausal hot flashes
Menopausal hormone therapy and cardiovascular risk
Menopausal hormone therapy and the risk of breast cancer
Postmenopausal hormone therapy in the prevention and treatment of osteoporosis
Menopausal hormone therapy: Benefits and risks
Preparations for menopausal hormone therapy
Treatment of menopausal symptoms with hormone therapy
Treatment of genitourinary syndrome of menopause (vulvovaginal atrophy)

The following organization also provides reliable health information.

- North American Menopause Society (NAMS) MenoPro mobile app

  (https://www.menopause.org/for-women/-i-menopro-i-mobile-app)

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