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# Endometrial Cancer Causes, Risk Factors, and Prevention

Learn about the risk factors for endometrial cancer and what you might be able to do to help lower your risk.

## Risk Factors

A risk factor is anything that raises your chance of getting a disease such as cancer. Learn more about the risk factors for endometrial cancer.

- [Endometrial Cancer Risk Factors](#)
- [What Causes Endometrial Cancer?](#)

## Prevention

There's no way to completely prevent endometrial cancer. But there are things you can do that might help lower your risk. Learn more.

- [Can Endometrial Cancer Be Prevented?](#)

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# Endometrial Cancer Risk Factors

- [Obesity](#)
- [Hormone factors](#)

- [Using an intrauterine device](#)
- [Age](#)
- [Diet and exercise](#)
- [Diabetes](#)
- [Family history](#)
- [Breast or ovarian cancer](#)
- [Endometrial hyperplasia](#)
- [Prior pelvic radiation therapy](#)

A risk factor is anything that raises your chance of getting a disease such as cancer. Different cancers have different risk factors. Some risk factors, like smoking or sun exposure, can be changed. Others, like a person's age or family history, can't be changed.

Although certain factors can increase a woman's risk for endometrial cancer, they don't always cause the disease. Many women with risk factors never develop endometrial cancer.

Some women with endometrial cancer don't have any known risk factors. Even if a woman with endometrial cancer has one or more risk factors, there's no way to know which, if any, of them caused her cancer.

Many factors affect the risk of developing endometrial cancer, including:

- Obesity
- Things that affect hormone levels, like taking estrogen after menopause, birth control pills, or tamoxifen; the number of menstrual cycles (over a lifetime), pregnancy, certain ovarian tumors, and polycystic ovarian syndrome (PCOS)
- Use of an intrauterine device (IUD)
- Age
- Diet and exercise
- Type 2 diabetes
- Family history (having close relatives with endometrial or colorectal cancer)
- Having had breast or ovarian cancer in the past
- Having had endometrial hyperplasia in the past
- Treatment with radiation therapy to the pelvis to treat another cancer

**Some of these, like pregnancy, birth control pills, and the use of an intrauterine device are linked to a lower risk of endometrial cancer, while many are linked to a**

**higher risk.** These factors and how they affect endometrial cancer risk are covered in more detail below.

## Obesity

Obesity is a strong risk factor for endometrial cancer and linked to hormone changes, which are covered in more detail below. A woman's ovaries produce most of her estrogen before menopause. But fat tissue can change some other hormones (called *androgens*) into estrogens. This can impact estrogen levels, especially after menopause. Having more fat tissue can increase a woman's estrogen levels, which increases her endometrial cancer risk.

In comparison with women who stay at a healthy weight, endometrial cancer is twice as common in overweight women (BMI 25 to 29.9), and more than 3 times as common in obese women (BMI > 30). You can find your BMI using our [body mass index \(BMI\) calculator](#)<sup>1</sup>.

Gaining weight as you get older age and weight cycling (gaining and losing a lot of weight many times in your life) have also been linked to a higher risk of endometrial cancer after menopause.

## Hormone factors

A woman's hormone balance plays a part in the development of most endometrial cancers. Many of the risk factors for endometrial cancer affect estrogen levels. Before menopause, the ovaries are the major source of the 2 main types of female hormones -- estrogen and progesterone.

The balance between these hormones changes each month during a woman's menstrual cycle. This produces a woman's monthly periods and keeps the endometrium healthy. A shift in the balance of these hormones toward more estrogen increases a woman's risk for endometrial cancer.

After menopause, the ovaries stop making these hormones, but a small amount of estrogen is still made naturally in fat tissue. Estrogen from fat tissue has a bigger impact after menopause than it does before menopause.

## Estrogen therapy

Treating the symptoms of menopause with hormones is known as menopausal

hormone therapy (or sometimes hormone replacement therapy). Estrogen is the major part of this treatment. Estrogen treatment can help reduce hot flashes, improve vaginal dryness, and help prevent the weakening of the bones (osteoporosis) that can occur with menopause.

But using estrogen alone (without progesterone) can lead to endometrial cancer in women who still have a uterus. To lower that risk, a progestin (progesterone or a drug like it) must be given along with estrogen. This is called combination hormone therapy.

Women who take progesterone along with estrogen to treat menopausal symptoms do not have an increased risk of endometrial cancer. Still, taking this combination increases a woman's chance of developing breast cancer and also increases the risk of serious blood clots.

If you are taking (or plan to take) hormones after menopause, it's important to discuss the possible risks (including cancer, blood clots, heart attacks, and stroke) with your doctor.

Like any other medicine, hormones should be used at the lowest dose needed and for the shortest possible time to control symptoms. As with any other medicine you take for a long time, you'll need to see your doctor regularly. Experts recommend yearly follow-up pelvic exams. If you have any abnormal bleeding or discharge from your vagina you should see a health care provider right away. (Do not wait until your next check-up).

For more information about the cancer risks linked to hormone treatment after menopause, see [Menopausal Hormone Therapy and Cancer Risk<sup>2</sup>](#).

## **Birth control pills**

Using birth control pills (oral contraceptives) lowers the risk of endometrial cancer. The risk is lowest in women who take the pill for a long time, and this protection lasts for at least 10 years after a woman stops taking the pill. But it's important to look at all of the risks and benefits when choosing a contraceptive method; endometrial cancer risk is only one factor to consider. It's a good idea to discuss the pros and cons of different types of birth control with your provider.

## **Total number of menstrual cycles**

Having more menstrual cycles during a woman's lifetime raises her risk of endometrial cancer. Starting menstrual periods (menarche) before age 12 and/or going through menopause later in life raises the risk. Starting periods early is less a risk factor for

women with early menopause. Likewise, late menopause may not lead to a higher risk in women whose periods began later in their teens.

## Pregnancy

The hormonal balance shifts toward more progesterone during pregnancy. So having many pregnancies helps protect against endometrial cancer. Women who have never been pregnant have a higher risk, especially if they were also infertile (unable to become pregnant).

## Tamoxifen

Tamoxifen is a drug that is used to help prevent and treat [breast cancer](#)<sup>3</sup>. Tamoxifen acts as an anti-estrogen in breast tissue, but it acts like an estrogen in the uterus. In women who have gone through menopause, it can cause the uterine lining to grow, which increases the risk of endometrial cancer.

The risk of developing endometrial cancer from tamoxifen is low (less than 1% per year). Women taking tamoxifen must balance this risk against the benefits of this drug in treating and preventing breast cancer. This is an issue women should discuss with their providers. If you are taking tamoxifen, you should have yearly gynecologic exams and should be sure to report any abnormal bleeding, as this could be a sign of endometrial cancer.

## Ovarian tumors

A certain type of ovarian tumor, the *granulosa cell tumor*, often makes estrogen. Estrogen made by one of these tumors isn't controlled the way hormone release from the ovaries is, and it can sometimes lead to high estrogen levels. The resulting hormone imbalance can stimulate the endometrium and even lead to endometrial cancer. In fact, sometimes vaginal bleeding from endometrial cancer is the first symptom of one of these tumors.

## Polycystic ovarian syndrome

Women with a condition called *polycystic ovarian syndrome* (PCOS) have abnormal hormone levels, such as higher androgen (male hormones) and estrogen levels and lower levels of progesterone. The increase in estrogen relative to progesterone can increase a woman's chance of getting endometrial cancer. PCOS is also a leading cause of infertility in women.

## Using an intrauterine device

Women who used an intrauterine device (IUD) for birth control seem to have a lower risk of getting endometrial cancer. Information about this protective effect is limited to IUDs that do not contain hormones. Researchers have not yet studied whether newer types of IUDs that release progesterone have any effect on endometrial cancer risk. But these IUDs are sometimes used to treat pre-cancers and early endometrial cancers in women who wish to be able to get pregnant in the future.

## Age

The risk of endometrial cancer increases as a woman gets older.

## Diet and exercise

A high-fat diet can increase the risk of many cancers, including endometrial cancer. Because fatty foods are also high-calorie foods, a high-fat diet can lead to obesity, which is a well-known endometrial cancer risk factor. Many scientists think this is the main way in which a high-fat diet raises endometrial cancer risk. Some scientists think that fatty foods may also have a direct effect on how the body uses estrogen, which increases endometrial cancer risk.

Physical activity lowers the risk of endometrial cancer. Many studies have found that women who exercise more have a lower risk of endometrial cancer, while others suggest that women who spent more time sitting have a higher risk. To learn more, read the [American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention](#)<sup>4</sup>.

## Diabetes

Endometrial cancer may be about twice as common in women with type 2 diabetes. But diabetes is more common in people who are overweight and less active, which are also risk factors for endometrial cancer. This makes it hard to find a clear link.

## Family history

Endometrial cancer tends to run in some families. Some of these families also have a higher risk for [colon cancer](#)<sup>5</sup>. This disorder is called **hereditary nonpolyposis colon cancer (HNPCC)**. Another name for HNPCC is **Lynch syndrome**. In most cases, this

disorder is caused by a defect in either the mismatch repair gene *MLH1* or the gene *MSH2*. But at least 5 other genes can cause HNPCC: *MLH3*, *MSH6*, *TGBR2*, *PMS1*, and *PMS2*. An abnormal copy of any one of these genes reduces the body's ability to repair damage to its DNA or control cell growth. This results in a very high risk of colon cancer, as well as a high risk of endometrial cancer. Women with this syndrome have a up to a 70% risk of developing endometrial cancer at some point. (The risk for women in general is about 3%.) The risk of ovarian cancer is also increased. General information about inherited cancer syndromes can be found in [Family Cancer Syndromes](#)<sup>6</sup>.

Some families have a higher rate of only endometrial cancer. These families may have a different genetic disorder that hasn't been found yet.

## Breast or ovarian cancer

Women who have had [breast cancer](#)<sup>7</sup> or [ovarian cancer](#)<sup>8</sup> may have an increased risk of endometrial cancer, too. Some of the dietary, hormone, and reproductive risk factors for breast and ovarian cancer also increase endometrial cancer risk.

## Endometrial hyperplasia

Endometrial hyperplasia is an increased growth of the endometrium. Mild or simple hyperplasia, the most common type, has a very small risk of becoming cancer. It may go away on its own or after treatment with hormone therapy. If the hyperplasia is called "atypical," it has a higher chance of becoming a cancer. **Simple atypical hyperplasia** turns into cancer in about 8% of cases if it's not treated. **Complex atypical hyperplasia (CAH)** has a risk of becoming cancer in up to 29% of cases if it's not treated, and the risk of having an undetected endometrial cancer is even higher. For this reason, CAH is usually treated. (Treatment is discussed in [Can endometrial cancer be prevented?](#))

## Prior pelvic radiation therapy

Radiation used to treat some other cancers can damage the DNA of cells, sometimes increasing the risk of a [second type of cancer](#)<sup>9</sup> such as endometrial cancer.

## Hyperlinks

1. [www.cancer.org/cancer/risk-prevention/diet-physical-activity/body-weight-and-](http://www.cancer.org/cancer/risk-prevention/diet-physical-activity/body-weight-and-)

- [cancer-risk/body-mass-index-bmi-calculator.html](#)
2. [www.cancer.org/cancer/risk-prevention/medical-treatments/menopausal-hormone-replacement-therapy-and-cancer-risk.html](http://www.cancer.org/cancer/risk-prevention/medical-treatments/menopausal-hormone-replacement-therapy-and-cancer-risk.html)
  3. [www.cancer.org/cancer/types/breast-cancer.html](http://www.cancer.org/cancer/types/breast-cancer.html)
  4. [www.cancer.org/cancer/risk-prevention/diet-physical-activity/acs-guidelines-nutrition-physical-activity-cancer-prevention.html](http://www.cancer.org/cancer/risk-prevention/diet-physical-activity/acs-guidelines-nutrition-physical-activity-cancer-prevention.html)
  5. [www.cancer.org/cancer/types/colon-rectal-cancer.html](http://www.cancer.org/cancer/types/colon-rectal-cancer.html)
  6. [www.cancer.org/cancer/risk-prevention/genetics/family-cancer-syndromes.html](http://www.cancer.org/cancer/risk-prevention/genetics/family-cancer-syndromes.html)
  7. [www.cancer.org/cancer/types/breast-cancer.html](http://www.cancer.org/cancer/types/breast-cancer.html)
  8. [www.cancer.org/cancer/types/ovarian-cancer.html](http://www.cancer.org/cancer/types/ovarian-cancer.html)
  9. [www.cancer.org/cancer/survivorship/long-term-health-concerns/second-cancers-in-adults.html](http://www.cancer.org/cancer/survivorship/long-term-health-concerns/second-cancers-in-adults.html)
  10. [www.cancer.org/cancer/types/endometrial-cancer/references.html](http://www.cancer.org/cancer/types/endometrial-cancer/references.html)

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National Cancer Institute. Endometrial Cancer Treatment (PDQ®)—Patient Version. April 26, 2018. Accessed at [www.cancer.gov/types/uterine/patient/endometrial-treatment-pdq](http://www.cancer.gov/types/uterine/patient/endometrial-treatment-pdq) on January 31, 2019.

Raglan O, Kalliala I, Markozannes G, et al. Risk Factors for Endometrial Cancer: An

umbrella review of the literature. *Int J Cancer*. 2018 Nov 2.

[See all references for Endometrial Cancer](#)

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## What Causes Endometrial Cancer?

We don't yet know exactly what causes most cases of endometrial cancer, but we do know there are risk factors, like obesity and hormone imbalance, that are strongly linked to this cancer.

We know that most endometrial cancer cells have estrogen and/or progesterone receptors on their surfaces. Somehow, interaction of these receptors and these hormones leads to increased growth of the endometrium. This increased growth can become more and more abnormal until it develops into a cancer.

As noted in the [risk factors section](#), many of the known endometrial cancer risk factors affect the balance between estrogen and progesterone in the body.

Scientists are learning more about changes in the DNA of certain genes that occur when normal endometrial cells become cancer. Some of these are discussed in [What's New in Endometrial Cancer Research?](#)<sup>1</sup>

### Hyperlinks

1. [www.cancer.org/cancer/types/endometrial-cancer/about/research.html](http://www.cancer.org/cancer/types/endometrial-cancer/about/research.html)
2. [www.cancer.org/cancer/types/endometrial-cancer/references.html](http://www.cancer.org/cancer/types/endometrial-cancer/references.html)

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[See all references for Endometrial Cancer](#)

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## Can Endometrial Cancer Be Prevented?

- [Get to and stay at a healthy weight](#)
- [Be physically active](#)
- [Discuss pros and cons of hormone therapy with your doctor](#)
- [Get treated for endometrial problems](#)
- [Talk to your doctor if you have HNPCC](#)

There's no sure way to prevent endometrial cancer. But there are things you can do that may help lower your risk of developing this disease. They're based on changing your risk factors whenever possible.

### Get to and stay at a healthy weight

Women who are overweight or obese are up to 3 times more likely to get endometrial cancer compared with women at a healthy weight. [Getting to and staying at a healthy weight<sup>1</sup>](#) is one way to lower the risk of this cancer.

### Be physically active

Studies have linked higher levels of physical activity to lower risks of endometrial

cancer, so getting regular physical activity (exercise) may also be a way to help lower endometrial cancer risk. An active lifestyle can help you stay at a healthy weight, as well as lower the risk of high blood pressure and diabetes (another risk factor for endometrial cancer).

## Discuss pros and cons of hormone therapy with your doctor

Estrogen to treat the symptoms of menopause is available in many different forms like pills, skin patches, shots, creams, and vaginal rings. If you're thinking about using estrogen for menopausal symptoms, ask your doctor about how it will affect your risk of endometrial cancer. Progestins (progesterone-like drugs) can reduce the risk of endometrial cancer in women taking estrogen therapy, but this combination increases the risk of breast cancer. If you still have your uterus and are taking estrogen therapy, be sure to discuss this issue with your doctor.

## Get treated for endometrial problems

Getting proper treatment of pre-cancer disorders of the endometrium is another way to lower the risk of endometrial cancer. Most endometrial cancers develop over a period of years. Many are known to come after, and possibly start, from less serious changes in the endometrium called *endometrial hyperplasia*. (See [Endometrial Cancer Risk Factors](#) for more on this.)

Some cases of hyperplasia go away without treatment, but sometimes it needs to be treated with hormones or even surgery. Treatment with progestins (see [Hormone Therapy for Endometrial Cancer](#)<sup>2</sup>) and a dilation and curettage (D&C) or hysterectomy (removing the uterus) can prevent hyperplasia from becoming cancer. (D&C is described in [Tests for Endometrial Cancer](#)<sup>3</sup>.)

Abnormal vaginal bleeding is the most common [symptom of endometrial pre-cancers and cancers](#)<sup>4</sup>. If you have unusual bleeding, see a health care provider and have it checked right away.

## Talk to your doctor if you have HNPCC

Women with [hereditary nonpolyposis colon cancer](#)<sup>5</sup> (HNPCC or Lynch syndrome) have a very high risk of endometrial cancer. Most experts recommend that a woman with HNPCC have her uterus, ovaries, and fallopian tubes removed (a hysterectomy and bilateral salpingo-oophorectomy) after she's finished having children to prevent endometrial cancer.

## Hyperlinks

1. [www.cancer.org/cancer/risk-prevention/diet-physical-activity.html](http://www.cancer.org/cancer/risk-prevention/diet-physical-activity.html)
2. [www.cancer.org/cancer/types/endometrial-cancer/treating/hormone-therapy.html](http://www.cancer.org/cancer/types/endometrial-cancer/treating/hormone-therapy.html)
3. [www.cancer.org/cancer/types/endometrial-cancer/detection-diagnosis-staging/how-diagnosed.html](http://www.cancer.org/cancer/types/endometrial-cancer/detection-diagnosis-staging/how-diagnosed.html)
4. [www.cancer.org/cancer/types/endometrial-cancer/detection-diagnosis-staging/signs-and-symptoms.html](http://www.cancer.org/cancer/types/endometrial-cancer/detection-diagnosis-staging/signs-and-symptoms.html)
5. [www.cancer.org/cancer/risk-prevention/genetics/family-cancer-syndromes.html](http://www.cancer.org/cancer/risk-prevention/genetics/family-cancer-syndromes.html)
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