



# Endometrial Cancer Causes, Risk Factors, and Prevention

## Risk Factors

A risk factor is anything that affects 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 is no way to completely prevent cancer. But there are things you can do that might lower your risk. Learn more.

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

## Endometrial Cancer Risk Factors

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

Although certain factors increase a woman's risk for developing endometrial cancer, they do not always cause the disease. Many women with one or more risk factors never develop endometrial cancer.

Some women with endometrial cancer do not have any known risk factors. Even if a woman with endometrial cancer has one or more risk factors, there is no way to know which, if any, of these factors was responsible for her cancer.

Several factors influence the risk of developing endometrial cancer, including:

- Things that affect hormone levels, like taking estrogen after menopause, birth control pills, or tamoxifen; the number of menstrual cycles (over a lifetime), pregnancy, obesity, certain ovarian tumors, and polycystic ovarian syndrome
- Use of an intrauterine device
- Age
- Diet and exercise
- Diabetes
- Family history (having close relatives with endometrial or colorectal cancer)
- Having been diagnosed with breast or ovarian cancer in the past
- Having been diagnosed with 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 discussed in more detail below.

## 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 during a woman's menstrual cycle each month. 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 developing 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 reduce hot flashes, improve vaginal dryness, and help prevent the weakening of the bones (osteoporosis) that can occur

with menopause.

Doctors have found, however, that using estrogen alone (without progesterone) can lead to type I 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 approach 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 is 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 only at the lowest dose that is 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 the vagina you should see your doctor or other health care provider right away (and not wait for a check-up).

For more information about the cancer risks from taking hormones after menopause, see [Menopausal Hormone Therapy and Cancer Risk](#).

## **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 continues for at least 10 years after a woman stops taking this form of birth control. However, it is important to look at all of the risks and benefits when choosing a contraceptive method; endometrial cancer risk is only one factor to be considered. It's a good idea to discuss the pros and cons of different types of birth control with your doctor.

## **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 protects against endometrial cancer. Women who have never been pregnant have a higher risk, especially if they were also infertile (unable to become pregnant).

## **Obesity**

A woman's ovaries produce most of her estrogen, but fat tissue can change some other hormones (called *androgens*) into estrogens. Having more fat tissue can increase a woman's estrogen levels, which increases her endometrial cancer risk. In comparison with women who maintain a healthy weight, endometrial cancer is twice as common in overweight women, and more than three times as common in obese women.

## **Tamoxifen**

Tamoxifen is a drug that is used to prevent and treat [breast cancer](#). 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 doctors. 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 release by one of these tumors is not controlled the way hormone release from the ovaries is, and 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. However, these IUDs are sometimes used to treat pre-cancers and early endometrial cancers in women who wish to preserve child-bearing ability.

## **Age**

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

## **Diet and exercise**

A high-fat diet can increase the risk of several 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 estrogen metabolism, which increases endometrial cancer risk.

Physical activity lowers the risk of endometrial cancer. Several studies found that women who exercised more had a lower risk of endometrial cancer, while in one study women who spent more time sitting had a higher risk. To learn more, you can read the [American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention](#).

## **Diabetes**

Endometrial cancer may be as much as 4 times more common in women with diabetes. Diabetes is more common in people who are overweight, but even people with diabetes who are not overweight have a higher risk of endometrial cancer.

## Family history

Endometrial cancer tends to run in some families. Some of these families also have an inherited tendency to develop [colon cancer](#). 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 regulate 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 40% to 60% risk of developing endometrial cancer at some point. The risk of ovarian cancer is also increased. General information about inherited cancer syndromes can be found in [Family Cancer Syndromes](#).

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

## Breast or ovarian cancer

Women who have had [breast cancer](#) or [ovarian cancer](#) may have an increased risk of developing endometrial cancer, too. Some of the dietary, hormonal, 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 cancerous. 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. If it's not treated, **complex atypical hyperplasia** (CAH) has a risk of becoming cancerous in up to 29% of cases, and the risk of having an undetected endometrial cancer is even higher. For this reason, CAH is usually treated. (Treatment is discussed in the section [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](#) such as endometrial cancer.

- [References](#)

[See all references for Endometrial Cancer](#)

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## What Causes Endometrial Cancer?

We do not yet know exactly what causes most cases of endometrial cancer, but we do know certain risk factors, particularly hormone imbalance, for this type of cancer. A great deal of research is going on to learn more about the disease.

We know that most endometrial cancer cells contain estrogen and/or progesterone receptors on their surfaces. Somehow, interaction of these receptors with their hormones leads to increased growth of the endometrium. This can mark the beginning of cancer. The 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 cancerous. Some of these are discussed in [What's New in Endometrial Cancer Research and Treatment?](#)

- [References](#)

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# Can Endometrial Cancer Be Prevented?

Most cases of endometrial cancer cannot be prevented, but there are some things that may lower your risk of developing this disease.

## Get to and stay at a healthy weight

One way to lower endometrial cancer risk is to do what you can to change your [risk factors](#) whenever possible. For example, women who are overweight or obese have up to 3½ times the risk of getting endometrial cancer compared with women at a healthy weight. [Getting to and maintaining a healthy weight](#) is one way to lower the risk of this cancer.

## Be physically active

Studies have also linked higher levels of physical activity to lower risks of endometrial cancer, so engaging in 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 (other risk factors 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 are 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, discuss this issue with your doctor.

## Get treated for endometrial problems



Getting proper treatment of pre-cancerous 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 follow and possibly start from less serious abnormalities of the endometrium called *endometrial hyperplasia* (see [Endometrial Cancer Risk Factors](#)). Some cases of hyperplasia will go away without treatment, but it sometimes needs to be treated with hormones or even surgery. Treatment with progestins (see [Hormone Therapy for Endometrial Cancer](#)) and a dilation and curettage (D&C) or hysterectomy can prevent hyperplasia from becoming cancerous. (D&C is described in [Tests for Endometrial Cancer](#)) Abnormal vaginal bleeding is the most common [symptom of endometrial pre-cancers and cancers](#), and it needs to be reported and evaluated right away.

## Talk to your doctor if you have HNPCC

Women with [hereditary nonpolyposis colon cancer](#) (HNPCC or Lynch syndrome) have a very high risk of endometrial cancer. A woman with HNPCC may choose to have her uterus removed (a hysterectomy) after she has finished having children to prevent endometrial cancer. One study found that none of 61 women with HNPCC who had prophylactic (preventive) hysterectomies was later found to have endometrial cancer, while 1/3 of the women who didn't have the surgery were diagnosed with endometrial cancer over the next 7 years.

- [References](#)

[See all references for Endometrial Cancer](#)

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