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About Endometrial Cancer

Overview and Types

If you have been diagnosed with endometrial cancer or are worried about it, you likely have a lot of questions. Learning some basics is a good place to start.

- [What Is Endometrial Cancer?](#)

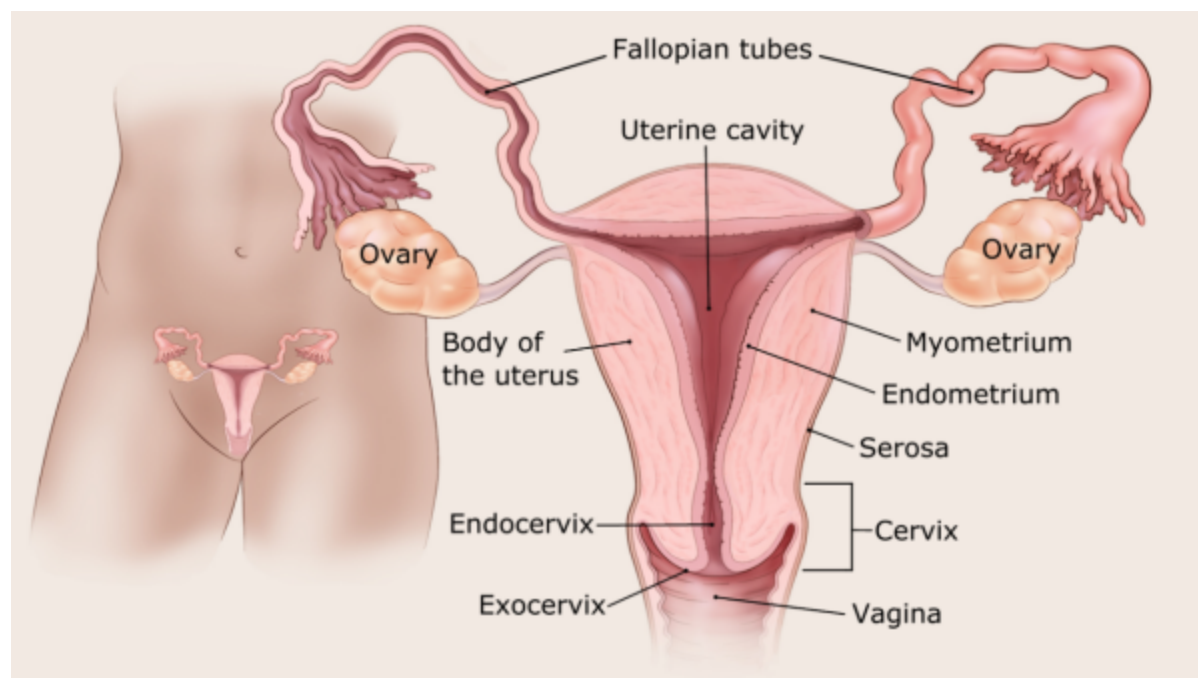
Research and Statistics

See the latest estimates for new cases of endometrial cancer and deaths in the US and what research is currently being done.

- [Key Statistics for Endometrial Cancer](#)
 - [What's New in Endometrial Cancer Research and Treatment?](#)
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What Is Endometrial Cancer?

Endometrial cancer starts when cells in the inner lining of the uterus (endometrium) begin to grow out of control. Cells in nearly any part of the body can become cancer, and can spread to other areas of the body. To learn more about how cancers start and spread, see [What Is Cancer?](#)¹



About the uterus and endometrium

The uterus is a hollow organ, which is normally about the size and shape of a medium-sized pear. The uterus is where a fetus grows and develops when a woman is pregnant. The uterus has 2 main parts (see image below):

- The *cervix* is the lower end of the uterus that extends into the vagina.
- The upper part of the uterus is called the *body* or the *corpus*. (*Corpus* is the Latin word for body.)

Although the cervix is technically part of the uterus, when people talk about cancer of the uterus, they usually mean the body, not the cervix.

The body of the uterus has 2 main layers. The inner layer or lining is called the *endometrium*. The outer layer of muscle is known as the *myometrium*. This thick layer of muscle is needed to push the baby out during birth. The tissue coating the outside of the uterus is the *serosa*.

During a woman's menstrual cycle, hormones cause the endometrium to change. During the early part of the cycle, before the ovaries release an egg (ovulation), the ovaries produce hormones called *estrogens*. Estrogen causes the endometrium to thicken so that it could nourish an embryo if pregnancy occurs. If there is no pregnancy, estrogen is produced in lower amounts and more of the hormone called *progesterone* is

made after ovulation. This prepares the innermost layer of the lining to shed. By the end of the cycle, the endometrial lining is shed from the uterus and becomes the menstrual flow (period). This cycle repeats until the woman's goes through menopause (change of life).

Types of cancers of the uterus and endometrium

The 2 main types of cancer of the uterus are:

- **Uterine sarcomas**, which start in the muscle layer (myometrium) or supporting connective tissue of the uterus. These include uterine leiomyosarcomas and endometrial stromal sarcomas. These cancers are not covered here, but are discussed in detail in [Uterine Sarcoma²](#).
- **Endometrial carcinomas**, which start in the cells of the inner lining of the uterus (the endometrium). Nearly all cancers of the uterus are this type. These cancers are the focus of the remainder of this information.

Endometrial carcinomas can be divided into different types based on how the cells look under the microscope (histologic types). These include:

- Adenocarcinoma, (most endometrial cancers are adenocarcinomas)
- Carcinosarcoma (discussed more below)
- Squamous cell carcinoma
- Undifferentiated carcinoma
- Small cell carcinoma
- Transitional carcinoma

The most common type of adenocarcinoma is **endometrioid cancer**. Endometrioid cancers are made up of cells in glands that look much like the normal uterine lining (endometrium). Some of these cancers have squamous cells (squamous cells are flat, thin cells that can be found on the outer surface of the cervix), as well as glandular cells.

There are many variants (or sub-types) of endometrioid cancers including:

- Adenocarcinoma, (with squamous differentiation)
- Adenoacanthoma
- Adenosquamous (or mixed cell)
- Secretory carcinoma
- Ciliated carcinoma

- Villoglandular adenocarcinoma

Clear-cell carcinoma, mucinous adenocarcinoma, and papillary serous adenocarcinoma are less common types of endometrial adenocarcinomas. These types tend to be more aggressive than most endometrial cancers. They tend to grow quickly and often have spread outside the uterus at the time of diagnosis.

Grading endometrial carcinomas

The **grade** of an endometrial cancer is based on how much the cancer forms glands that look similar to those found in normal, healthy endometrium.

In **lower-grade cancers (grades 1 and 2)**, more of the cancerous tissue forms glands.

In **higher-grade cancers (grade 3)**, more of the cancer cells are arranged in a haphazard or disorganized way and do not form glands.

- **Grade 1** tumors have 95% or more of the cancerous tissue forming glands.
- **Grade 2** tumors have between 50% and 94% of the cancerous tissue forming glands.
- **Grade 3** tumors have less than half of the cancerous tissue forming glands. Grade 3 cancers tend to be aggressive and have a poorer outlook than lower-grade cancers.

Grades 1 and 2 endometrioid cancers are type 1 endometrial cancers. Type 1 cancers are usually not very aggressive and do not spread to other tissues quickly. Type 1 endometrial cancers are thought to be caused by excess estrogen. They sometimes develop from atypical hyperplasia, an abnormal overgrowth of cells in the endometrium (see the [risk factors](#)³ section).

A small number of endometrial cancers are **type 2 endometrial cancer**. Type 2 cancers are more likely to grow and spread outside the uterus, they have a poorer outlook (than type 1 cancers). Doctors tend to treat these cancers more aggressively. They don't seem to be caused by too much estrogen. Type 2 cancers include all endometrial carcinomas that aren't type 1, such as papillary serous carcinoma, clear-cell carcinoma, undifferentiated carcinoma, and grade 3 endometrioid carcinoma. These cancers don't look at all like normal endometrium and so are called **poorly differentiated** or **high-grade**.

Uterine carcinosarcoma (CS) starts in the endometrium and has features of both

endometrial carcinoma and sarcoma. In the past, CS was considered a type of uterine sarcoma, but doctors now believe that CS is a carcinoma that is abnormal and so no longer looks much like the cells it came from (poorly differentiated).

Uterine CS is considered a type 2 endometrial carcinoma. CS tumors are also known as *malignant mixed mesodermal tumors* or *malignant mixed mullerian tumors* (MMMTs). They make up about 4% of uterine cancers.

Cervical cancers

Cancers that start in the cervix and then spread to the body of the uterus are different from cancers that start in the body of the uterus; they are described in [Cervical Cancer⁴](#).

References

See all references for Endometrial Cancer

<https://www.cancer.org/content/cancer/en/cancer/endometrial-cancer/references.html>

Last Medical Review: February 10, 2016 Last Revised: February 29, 2016

Key Statistics for Endometrial Cancer

How common is endometrial cancer?

In the United States, cancer of the endometrium is the most common cancer of the female reproductive organs. The American Cancer Society estimates for cancer of the uterus in the United States for 2019 are:

- About 61,880 new cases of cancer of the body of the uterus (uterine body or corpus) will be diagnosed.
- About 12,160 women will die from cancers of the uterine body.

These estimates include both endometrial cancers and uterine sarcomas. Up to 10% of uterine body cancers are sarcomas, so the actual numbers for endometrial cancer

cases and deaths are slightly lower than these estimates.

Lifetime chance of getting endometrial cancer

Endometrial cancer affects mainly postmenopausal women. The average age of women diagnosed with endometrial cancer is 60. It is uncommon in women under the age of 45.

This cancer is slightly more common in white women, but black women are more likely to die from it. There are more than 600,000 survivors of endometrial cancer.

Visit the American Cancer Society's [Cancer Statistics Center](#) for more key statistics.

References

American Cancer Society. *Facts & Figures 2019*. American Cancer Society. Atlanta, Ga. 2019.

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What's New in Endometrial Cancer Research and Treatment?

Molecular pathology of endometrial cancer

For several years we have known that damaged or defective DNA (mutations) can change important genes that control cell growth. If these genes are damaged, out-of-control growth may result in cancer.

Sometimes, endometrial cancer and [colon cancer](#)¹ may seem to “run in a family.” We now know that some of these families have a higher risk for these cancers because they

have an inherited defect in certain genes that normally help repair damage to DNA.

If these repair enzymes are not working properly, damage to DNA is more likely to persist and cause cancer. Similar DNA repair defects have also been found in endometrial cancer cells from some patients without an inherited tendency to develop this disease. One of the normal genes responsible for suppressing tumor growth, called *PTEN*, is often abnormal in endometrial cancers.

Tests for this and other DNA changes may someday help [find endometrial cancers early](#)². Endometrial cancers without other tumor suppressor genes (or with inactive ones), such as the retinoblastoma (*Rb*) gene and the *TP53* gene, tend to be more likely to come back after initial treatment. Tests for these and other DNA changes may someday be used to help predict how aggressive the cancer might be and to select the best treatment for each woman with this disease. The long-range goal of this field of research is gene therapy that can correct the DNA abnormalities that caused the endometrial cells to become cancerous.

New treatments

New drugs, combinations of drugs and targeted therapies are being researched for use in women with advanced endometrial cancer. The use of adjuvant chemotherapy, with or without radiation is also being studied.

Targeted therapy

Researchers have been able to develop newer drugs that specifically target the gene and protein changes in cancer cells. These drugs work differently from standard chemotherapy (chemo) drugs. They often have different side effects. Some targeted therapies that are being studied to treat endometrial cancer include temsirolimus, bevacizumab, brivanib, and gefitinib.

Hormone therapy

Hormone therapy of endometrial cancer has often involved progestins, but drugs that affect estrogen may also be helpful. A recent study looked at using fulvestrant, a drug that blocks estrogen receptors.

Surgery

Another way to see if cancer has spread to the lymph nodes in the pelvis is to identify

and remove the lymph nodes that most likely are draining the cancer. This is called sentinel lymph node biopsy or mapping. In this procedure, a radioactive tracer and/or blue dye is injected into the area with the cancer. The lymph nodes that turn blue (from the dye) or that become radioactive (from the tracer) are removed at surgery. These lymph nodes are examined closely to see if they contain any cancer cells. This technique is still being evaluated for use in certain endometrial cancer tissue types and stages.

References

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