

National Cancer Institute

What You Need
To Know About™

Cancer of the Uterus

**U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES**

National Institutes of Health

National Cancer Institute Services

This is only one of many free booklets for people with cancer.

You may want more information for yourself, your family, and your doctor.

NCI offers comprehensive research-based information for patients and their families, health professionals, cancer researchers, advocates, and the public.

- **Call** NCI's Cancer Information Service at **1-800-4-CANCER (1-800-422-6237)**
- **Visit** us at **<http://www.cancer.gov>** or **<http://www.cancer.gov/espanol>**
- **Chat** using **LiveHelp**, NCI's instant messaging service, at **<http://www.cancer.gov/livehelp>**
- **E-mail** us at **cancergovstaff@mail.nih.gov**
- **Order** publications at **<http://www.cancer.gov/publications>** or by calling **1-800-4-CANCER**
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About This Booklet

This National Cancer Institute (NCI) booklet is about *cancer** that starts in the *uterus*. Other names for this disease are *uterine cancer* and *endometrial cancer*.

Each year in the United States, more than 43,000 women learn they have uterine cancer. Most are over 55 years old.

Learning about medical care for uterine cancer can help you take an active part in making choices about your care. This booklet tells about:

- Diagnosis and staging
- Treatment and follow-up care
- Taking part in research studies

This booklet has lists of questions that you may want to ask your doctor. Many people find it helpful to take a list of questions to a doctor visit. To help remember what your doctor says, you can take notes. You may also want to have a family member or friend go with you when you talk with the doctor—to take notes, ask questions, or just listen.

For the latest information about uterine cancer, visit NCI's Web site at **<http://www.cancer.gov/cancertopics/types/endometrial>**.

Also, NCI's Cancer Information Service can answer your questions about cancer. We can also send you NCI booklets and fact sheets. Call **1-800-4-CANCER (1-800-422-6237)**. Or chat using **LiveHelp**, NCI's instant messaging service, at **<http://www.cancer.gov/livehelp>**.

*Words in *italics* are in the Dictionary on page 27. The Dictionary explains these terms. It also shows how to pronounce them.

This booklet is not about uterine *sarcoma*. Uterine sarcoma is a different type of cancer. Women with sarcoma have different treatment options. For the latest information about uterine sarcoma, visit NCI's Web site at <http://www.cancer.gov/cancertopics/types/uterinesarcoma> or contact NCI's Cancer Information Service.

Also, this booklet is not about cancer that begins in the *cervix*. For the latest information about cervical cancer, visit NCI's Web site at <http://www.cancer.gov/cancertopics/types/cervical> or contact NCI's Cancer Information Service.

The Uterus

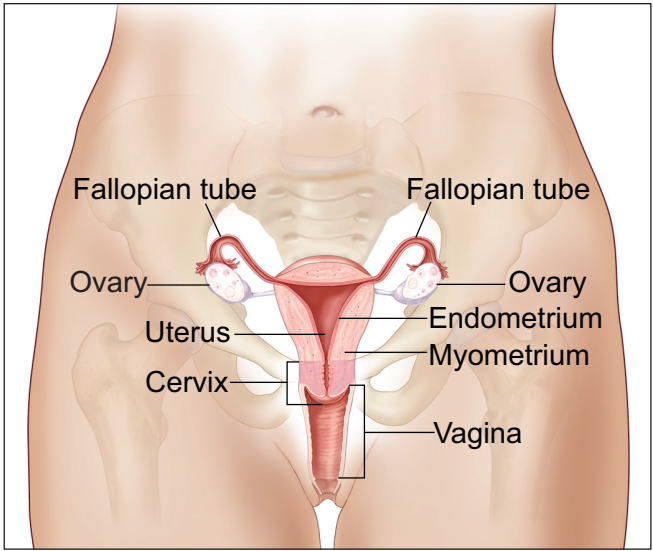
The uterus is part of a woman's *reproductive system*. It's a hollow *organ* in the *pelvis*.

The uterus has three parts:

- **Top:** The top (*fundus*) of your uterus is shaped like a dome. From the top of your uterus, the *fallopian tubes* extend to the *ovaries*.
- **Middle:** The middle part of your uterus is the body (*corpus*). This is where a baby grows.
- **Bottom:** The narrow, lower part of your uterus is the cervix. The cervix is a passageway to the *vagina*.

The wall of the uterus has two layers of *tissue*:

- **Inner layer:** The inner layer (lining) of the uterus is the *endometrium*. In women of childbearing age, the lining grows and thickens each month to prepare for pregnancy. If a woman does not become pregnant, the thick, bloody lining flows out of the body. This flow is a *menstrual period*.
- **Outer layer:** The outer layer of muscle tissue is the *myometrium*.



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This picture shows the uterus and nearby tissues.

Cancer Cells

Cancer begins in *cells*, the building blocks that make up tissues. Tissues make up the uterus and the other organs of the body.

Normal cells grow and divide to form new cells as the body needs them. When normal cells grow old or get damaged, they die, and new cells take their place.

Sometimes, this process goes wrong. New cells form when the body doesn't need them, and old or damaged cells don't die as they should. The buildup of extra cells often forms a mass of tissue called a growth or *tumor*.

Tumors in the uterus can be *benign* (not cancer) or *malignant* (cancer). Benign tumors are not as harmful as malignant tumors:

- **Benign tumors** (such as a *fibroid*, a *polyp*, or *endometriosis*):
 - are usually not a threat to life
 - can be treated or removed and usually don't grow back
 - don't invade the tissues around them
 - don't spread to other parts of the body
- **Malignant growths:**
 - may be a threat to life
 - usually can be removed but can grow back
 - can invade and damage nearby tissues and organs (such as the vagina)
 - can spread to other parts of the body

Cancer cells can spread by breaking away from the uterine tumor. They can travel through *lymph vessels* to nearby *lymph nodes*. Also, cancer cells can spread through the *blood vessels* to the lung, liver, bone, or brain. After spreading, cancer cells may attach to other tissues and grow to form new tumors that may damage those tissues. See the Staging section on page 9 for information about uterine cancer that has spread.

Risk Factors

When you get a diagnosis of uterine cancer, it's natural to wonder what may have caused the disease. Doctors usually can't explain why one woman gets uterine cancer and another doesn't.

However, we do know that women with certain *risk factors* may be more likely than others to develop uterine cancer. A risk factor is something that may increase the chance of getting a disease.

Studies have found the following risk factors for uterine cancer:

- **Abnormal overgrowth of the endometrium** (endometrial *hyperplasia*): An abnormal increase in the number of cells in the lining of the uterus is a risk factor for uterine cancer. Hyperplasia is not cancer, but sometimes it develops into cancer. Common symptoms of this condition are heavy menstrual periods, bleeding between periods, and bleeding after *menopause*. Hyperplasia is most common after age 40.

To prevent endometrial hyperplasia from developing into cancer, the doctor may recommend surgery to remove the uterus (*hysterectomy*) or hormone therapy with *progesterone* and regular follow-up exams.

- **Obesity**: Women who are obese have a greater chance of developing uterine cancer.
- **Reproductive and menstrual history**: Women are at increased risk of uterine cancer if at least one of the following apply:
 - Have never had children
 - Had their first menstrual period before age 12
 - Went through menopause after age 55

- **History of taking *estrogen alone*:** The risk of uterine cancer is higher among women who used estrogen alone (without progesterone) for *menopausal hormone therapy* for many years.
- **History of taking *tamoxifen*:** Women who took the drug tamoxifen to prevent or treat breast cancer are at increased risk of uterine cancer.
- **History of having *radiation therapy to the pelvis*:** Women who had radiation therapy to the pelvis are at increased risk of uterine cancer.
- **Family health history:** Women with a mother, sister, or daughter with uterine cancer are at increased risk of developing the disease. Also, women in families that have an inherited form of *colorectal cancer* (known as *Lynch syndrome*) are at increased risk of uterine cancer.

Many women who get uterine cancer have none of these risk factors, and many women who have known risk factors don't develop the disease.

Symptoms

The most common symptom of uterine cancer is abnormal vaginal bleeding. It may start as a watery, blood-streaked flow that gradually contains more blood. After menopause, any vaginal bleeding is abnormal.

These are common symptoms of uterine cancer:

- Abnormal vaginal bleeding, spotting, or discharge
- Pain or difficulty when emptying the bladder
- Pain during sex
- Pain in the pelvic area

These symptoms may be caused by uterine cancer or by other health problems. Women with these symptoms should tell their doctor so that any problem can be diagnosed and treated as early as possible.

Diagnosis

If you have symptoms that suggest uterine cancer, your doctor will try to find out what's causing the problems.

You may have a physical exam and blood tests. Also, you may have one or more of the following tests:

- ***Pelvic exam:*** Your doctor can check your uterus, vagina, and nearby tissues for any lumps or changes in shape or size.
- ***Ultrasound:*** An ultrasound device uses sound waves that can't be heard by humans. The sound waves make a pattern of echoes as they bounce off organs inside the pelvis. The echoes create a picture of your uterus and nearby tissues. The picture can show a uterine tumor. For a better view of the uterus, the device may be inserted into the vagina (*transvaginal ultrasound*).
- ***Biopsy:*** The removal of tissue to look for cancer cells is a biopsy. A thin tube is inserted through the vagina into your uterus. Your doctor uses gentle scraping and suction to remove samples of tissue. A *pathologist* examines the tissue under a microscope to check for cancer cells. In most cases, a biopsy is the only sure way to tell whether cancer is present.

You may want to ask the doctor these questions before having a biopsy:

- Why do I need a biopsy?
- How long will it take? Will I be awake? Will it hurt?
- What is the chance of infection or bleeding after the biopsy? Are there any other risks?
- How soon will I know the results? How do I get a copy of the pathology report?
- If I do have cancer, who will talk with me about treatment? When?

Grade

If cancer is found, the pathologist studies tissue samples from the uterus under a microscope to learn the grade of the tumor. The grade tells how much the tumor tissue differs from normal uterine tissue. It may suggest how fast the tumor is likely to grow.

Tumors with higher grades tend to grow faster than those with lower grades. Tumors with higher grades are also more likely to spread. Doctors use tumor grade along with other factors to suggest treatment options.

Staging

If uterine cancer is diagnosed, your doctor needs to learn the extent (stage) of the disease to help you choose the best treatment. The stage is based on whether the cancer has invaded nearby tissues or spread to other parts of the body.

When cancer spreads from its original place to another part of the body, the new tumor has the same kind of abnormal cells and the same name as the primary (original) tumor. For example, if uterine cancer spreads to the lung, the cancer cells in the lung are actually uterine cancer cells. The disease is *metastatic* uterine cancer, not lung cancer. It's treated as uterine cancer, not as lung cancer. Doctors sometimes call the new tumor "distant" disease.



To learn whether uterine cancer has spread, your doctor may order one or more tests:

- **Lab tests:** A *Pap test* can show whether cancer cells have spread to the cervix, and blood tests can show how well the liver and kidneys are working. Also, your doctor may order a blood test for a substance known as *CA-125*. Cancer may cause a high level of *CA-125*.
- **Chest x-ray:** An x-ray of the chest can show a tumor in the lung.
- **CT scan:** An x-ray machine linked to a computer takes a series of detailed pictures of your pelvis, abdomen, or chest. You may receive an injection of *contrast material* so your lymph nodes and other tissues show up clearly in the pictures. A CT scan can show cancer in the uterus, lymph nodes, lungs, or elsewhere.
- **MRI:** A large machine with a strong magnet linked to a computer is used to make detailed pictures of your uterus and lymph nodes. You may receive an injection of contrast material. MRI can show cancer in the uterus, lymph nodes, or other tissues in the abdomen.

In most cases, surgery is needed to learn the stage of uterine cancer. The *surgeon* removes the uterus and may take tissue samples from the pelvis and abdomen. After the uterus is removed, it is checked to see how deeply the tumor has grown. Also, the other tissue samples are checked for cancer cells.

These are the stages of uterine cancer:

- **Stage 0:** The abnormal cells are found only on the surface of the inner lining of the uterus. The doctor may call this *carcinoma in situ*.
- **Stage I:** The tumor has grown through the inner lining of the uterus to the endometrium. It may have invaded the myometrium.
- **Stage II:** The tumor has invaded the cervix.
- **Stage III:** The tumor has grown through the uterus to reach nearby tissues, such as the vagina or a lymph node.
- **Stage IV:** The tumor has invaded the bladder or intestine. Or, cancer cells have spread to parts of the body far away from the uterus, such as the liver, lungs, or bones.

Treatment

Treatment options for people with uterine cancer are *surgery, radiation therapy, chemotherapy, and hormone therapy*. You may receive more than one type of treatment.

The treatment that's right for you depends mainly on the following:

- Whether the tumor has invaded the muscle layer of the uterus
- Whether the tumor has invaded tissues outside the uterus
- Whether the tumor has spread to other parts of the body
- The grade of the tumor
- Your age and general health

You may have a team of specialists to help plan your treatment. Your doctor may refer you to a specialist, or you may ask for a referral. Specialists who treat uterine cancer include *gynecologists*, *gynecologic oncologists* (doctors who specialize in treating female cancers), *medical oncologists*, and *radiation oncologists*. Your health care team may also include an *oncology nurse* and a *registered dietitian*.

Your health care team can describe your treatment choices, the expected results of each, and the possible *side effects*. Because cancer therapy often damages healthy cells and tissues, side effects are common. Before treatment starts, ask your health care team about possible side effects and how treatment may change your normal activities. You and your health care team can work together to develop a treatment plan that meets your needs.

At any stage of disease, *supportive care* is available to control pain and other symptoms, to relieve the side effects of treatment, and to ease emotional concerns. Information about such care is available on NCI's Web site at <http://www.cancer.gov/cancertopics/coping>.

Also, NCI's Cancer Information Service can answer your questions about supportive care. Call **1-800-4-CANCER (1-800-422-6237)**. Or chat using **LiveHelp**, NCI's instant messaging service, at <http://www.cancer.gov/livehelp>.

You may want to talk with your doctor about taking part in a *clinical trial*. Clinical trials are research studies testing new treatments. They are an important option for people with all stages of uterine cancer. See the Taking Part in Cancer Research section on page 25.

You may want to ask your doctor these questions before you begin treatment:

- What is the grade of the tumor? What is the stage of the disease? Has the tumor invaded the muscle layer of the uterus or spread to other organs?
- What are my treatment choices? Which do you suggest for me? Why?
- What are the expected benefits of each kind of treatment?
- What can I do to prepare for treatment?
- Will I need to stay in the hospital? If so, for how long?
- What are the risks and possible side effects of each treatment? How can side effects be managed?
- What is the treatment likely to cost? Will my insurance cover it?
- How will treatment affect my normal activities?
- Would a research study (clinical trial) be a good choice for me?
- Can you recommend other doctors who could give me a second opinion about my treatment options?
- How often should I have checkups?

Surgery

Surgery is the most common treatment for women with uterine cancer. You and your surgeon can talk about the types of surgery (hysterectomy) and which may be right for you.

The surgeon usually removes the uterus, cervix, and nearby tissues. The nearby tissues may include:

- Ovaries
- Fallopian tubes
- Nearby lymph nodes
- Part of the vagina

The time it takes to heal after surgery is different for each woman. After a hysterectomy, most women go home in a couple days, but some women leave the hospital the same day. You'll probably return to your normal activities within 4 to 8 weeks after surgery.

You may have pain or discomfort for the first few days. Medicine can help control your pain. Before surgery, you should discuss the plan for pain relief with your doctor or nurse. After surgery, your doctor can adjust the plan if you need more pain control.

It's common to feel tired or weak for a while. You may have nausea and vomiting. Some women are constipated after surgery or lose control of their bladder. These effects are usually temporary.

If you haven't gone through menopause yet, you'll stop having menstrual periods after surgery, and you won't be able to become pregnant. Also, you may have hot flashes, vaginal dryness, and night sweats. These symptoms are caused by the sudden loss of female hormones. Talk with your doctor or nurse about your symptoms so that you can develop a treatment plan together. There are drugs and lifestyle changes that can help, and most symptoms go away or lessen with time.

Surgery to remove lymph nodes may cause *lymphedema* (swelling) in one or both legs. Your health care team can tell you how to prevent or relieve lymphedema.

For some women, a hysterectomy can affect sexual intimacy. You may have feelings of loss that make intimacy difficult. Sharing these feelings with your partner may be helpful. Sometimes couples talk with a counselor to help them express their concerns.

You may want to ask your doctor these questions before having surgery:

- What type of surgery do you recommend for me? Why?
- Will lymph nodes and other tissues be removed? Why?
- How will I feel after surgery? If I have pain, how can it be controlled?
- How long will I be in the hospital?
- When will I be able to return to normal activities?
- What are the long-term effects of the surgery?
- How will the surgery affect my sex life?

Radiation Therapy

Radiation therapy is an option for women with all stages of uterine cancer. It may be used before or after surgery. For women who can't have surgery for other medical reasons, radiation therapy may be used instead to destroy cancer cells in the uterus. Women with cancer that invades tissue beyond the uterus may have radiation therapy and chemotherapy.

Radiation therapy uses high-energy rays to kill cancer cells. It affects cells in the treated area only.

Doctors use two types of radiation therapy to treat uterine cancer. Some women receive both types:

- ***External radiation therapy***: A large machine directs radiation at your pelvis or other areas with cancer. The treatment is usually given in a hospital or clinic. You may receive external radiation 5 days a week for several weeks. Each session takes only a few minutes.
- ***Internal radiation therapy*** (also called *brachytherapy*): A narrow cylinder is placed inside your vagina, and a *radioactive* substance is loaded into the cylinder. Usually, a treatment session lasts only a few minutes and you can go home afterward. This common method of brachytherapy may be repeated two or more times over several weeks. Once the radioactive substance is removed, no radioactivity is left in the body.

Side effects depend mainly on which type of radiation therapy is used, how much radiation is given, and which part of your body is treated. External radiation to the abdomen and pelvis may cause nausea, vomiting, diarrhea, or urinary problems. You may lose hair in your genital area. Also, your skin in the treated area may become red, dry, and tender.

You are likely to become tired during external radiation therapy, especially in the later weeks of treatment. Resting is important, but doctors usually advise patients to try to stay as active as they can.

For women who have not had surgery to remove the ovaries, external radiation aimed at the pelvic area can harm the ovaries. Menstrual periods usually stop, and women may have hot flashes and other symptoms of menopause. Menstrual periods are more likely to return for younger women.

After either type of radiation therapy, you may have dryness, itching, or burning in your vagina. Your doctor may advise you to wait to have sex until a few weeks after radiation therapy ends.

Also, radiation therapy may make the vagina narrower. A narrow vagina can make sex or follow-up exams difficult. There are ways to prevent this problem. If it does occur, however, your health care team can tell you about ways to expand the vagina.

Although the side effects of radiation therapy can be upsetting, they can usually be treated or controlled. Talk with your doctor or nurse about ways to relieve discomfort.

You may find it helpful to read the NCI booklet *Radiation Therapy and You*.

You may want to ask your doctor these questions about radiation therapy:

- Why do I need this treatment?
- Which type of radiation therapy do you suggest for me?
- When will the treatments begin? When will they end?
- Will I need to stay in the hospital?
- How will I feel during treatment?
- How will radiation therapy affect my sex life?
- How will we know if the radiation treatment is working?
- Will I have any long-term side effects?

Chemotherapy

Chemotherapy uses drugs to kill cancer cells. It may be used after surgery to treat uterine cancer that has an increased risk of returning after treatment. For example, uterine cancer that is a high grade or is Stage II, III, or IV may be more likely to return. Also, chemotherapy may be given to women whose uterine cancer can't be completely removed by surgery. For advanced cancer, it may be used alone or with radiation therapy.

Chemotherapy for uterine cancer is usually given by vein (*intravenous*). It's usually given in cycles. Each cycle has a treatment period followed by a rest period.

You may have your treatment in an outpatient part of the hospital, at the doctor's office, or at home. Some women may need to stay in the hospital during treatment.

The side effects depend mainly on which drugs are given and how much. Chemotherapy kills fast-growing cancer cells, but the drugs can also harm normal cells that divide rapidly:

- **Blood cells:** When drugs lower the levels of healthy blood cells, you're more likely to get infections, bruise or bleed easily, and feel very weak and tired. Your health care team will check for low levels of blood cells. If your levels are low, your health care team may stop the chemotherapy for a while or reduce the dose of the drug. There are also medicines that can help your body make new blood cells.

- **Cells in hair roots:** Chemotherapy may cause hair loss. If you lose your hair, it will grow back after treatment, but the color and texture may be changed.
- **Cells that line the digestive system:** Chemotherapy can cause a poor appetite, nausea and vomiting, diarrhea, or mouth and lip sores. Your health care team can give you medicines and suggest other ways to help with these problems. They usually go away when treatment ends.

Other possible side effects include skin rash, tingling or numbness in your hands and feet, hearing problems, loss of balance, joint pain, or swollen legs and feet. Your health care team can suggest ways to control many of these problems. Most go away when treatment ends.

You may wish to read the NCI booklet *Chemotherapy and You*.

Hormone Therapy

Some uterine tumors need hormones to grow. These tumors have *hormone receptors* for the hormones estrogen, progesterone, or both. If lab tests show that the tumor in your uterus has these receptors, then hormone therapy may be an option.

Hormone therapy may be used for women with advanced uterine cancer. Also, some women with Stage I uterine cancer who want to get pregnant and have children choose hormone therapy instead of surgery.

The most common drug used for hormone therapy is progesterone tablets. Possible side effects include weight gain, swelling, and breast tenderness.

You may want to ask your doctor these questions about chemotherapy or hormone therapy:

- Why do I need this treatment?
- Which drug or drugs will I have?
- How do the drugs work?
- When will treatment start? When will it end?
- How will I feel during treatment? What are the side effects? Are there any lasting side effects? What can I do about them?

Second Opinion

Before starting treatment, you may want a second opinion about your diagnosis, stage of cancer, and treatment plan. Some people worry that the doctor will be offended if they ask for a second opinion. Usually the opposite is true. Most doctors welcome a second opinion. And many health insurance companies will pay for a second opinion if you or your doctor requests it. Some companies require a second opinion.

If you get a second opinion, the second doctor may agree with your first doctor's diagnosis and treatment plan. Or the second doctor may suggest another approach. Either way, you have more information and perhaps a greater sense of control. You can feel more confident about the decisions you make, knowing that you've looked at all of your options.

It may take some time and effort to gather your medical records and see another doctor. In most cases, it's not a problem to take several weeks to get a second

opinion. The delay in starting treatment usually will not make treatment less effective. To make sure, you should discuss this delay with your doctor.

There are many ways to find a doctor for a second opinion. You can ask your doctor, a local or state medical society, a nearby hospital, or a medical school for names of specialists.

Also, you can get information about treatment centers near you from NCI's Cancer Information Service. Call **1-800-4-CANCER (1-800-422-6237)**.

Or chat using **LiveHelp**, NCI's instant messaging service, at **<http://www.cancer.gov/livehelp>**.

Other sources can be found in the NCI fact sheet *How To Find a Doctor or Treatment Facility If You Have Cancer*.



Nutrition

It's important for you to take very good care of yourself before, during, and after cancer treatment. Taking care of yourself includes eating well so that you get the right amount of calories to maintain a good weight. You also need enough protein to keep up your strength. Eating well may help you feel better and have more energy.

Sometimes, especially during or soon after treatment, you may not feel like eating. You may be uncomfortable or tired. You may find that foods don't taste as good as they used to. In addition, the side effects of treatment (such as poor appetite, nausea, vomiting, or mouth blisters) can make it hard to eat well.

Your doctor, a registered dietitian, or another health care provider can suggest ways to help you meet your nutrition needs. Also, the NCI booklet *Eating Hints* has many useful ideas and recipes.

Follow-up Care

You'll need regular checkups (such as every 3 to 6 months) after treatment for uterine cancer. Checkups help ensure that any changes in your health are noted and treated if needed.

You should contact your doctor if you have any of the following health problems between checkups:

- Bleeding from your vagina, bladder, or rectum
- Bloating abdomen or swollen legs
- Pain in the abdomen or pelvis
- Shortness of breath or cough
- Loss of appetite or weight for no known reason

Uterine cancer may come back after treatment. Your doctor will check for return of cancer. Checkups may include a pelvic exam, lab tests (such as for CA-125), a chest x-ray, a CT scan, or an MRI.

NCI has publications to help answer questions about follow-up care and other concerns. You may find it helpful to read the NCI booklet *Facing Forward: Life After Cancer Treatment*. You may also want to read the NCI fact sheet *Follow-up Care After Cancer Treatment*.

Sources of Support

Learning that you have uterine cancer can change your life and the lives of those close to you. These changes can be hard to handle. It's normal for you, your family, and your friends to need help coping with the feelings that a diagnosis of cancer can bring.

Concerns about treatments and managing side effects, hospital stays, and medical bills are common. You may also worry about caring for your family, keeping your job, or continuing daily activities.

Here's where you can go for support:

- Doctors, nurses, and other members of your health care team can answer questions about treatment, working, or other activities.
- Social workers, counselors, or members of the clergy can be helpful if you want to talk about your feelings or concerns. Often, social workers can suggest resources for financial aid, transportation, home care, or emotional support.



- Support groups also can help. In these groups, patients or their family members meet with other patients or their families to share what they have learned about coping with cancer and the effects of treatment. Groups may offer support in person, over the telephone, or on the Internet. You may want to talk with a member of your health care team about finding a support group.
- NCI's Cancer Information Service can help you locate programs and services for people with cancer. Call **1-800-4-CANCER (1-800-422-6237)**. Or chat using **LiveHelp**, NCI's instant messaging service, at <http://www.cancer.gov/livehelp>.

- Your doctor or a sex counselor may be helpful if you and your partner are concerned about the effects of uterine cancer on your sex life. Ask your doctor about possible treatment of side effects and whether these effects are likely to last. Whatever the outlook, you and your partner may find it helps to discuss your concerns.

For tips on coping, you may want to read the NCI booklet *Taking Time: Support for People With Cancer*.

Taking Part in Cancer Research

Doctors all over the world are conducting many types of clinical trials (research studies in which people volunteer to take part). Clinical trials are designed to find out whether new treatments are safe and effective.

Even if the people in a trial do not benefit directly from a treatment, they may still make an important contribution by helping doctors learn more about uterine cancer and how to control it. Although clinical trials may pose some risks, doctors do all they can to protect their patients.

Doctors are studying new ways to use surgery, chemotherapy, radiation therapy, and hormone therapy for treatment of uterine cancer.

NCI is sponsoring many studies with women who have uterine cancer:

- **Surgery:** Doctors are studying whether lymphedema develops after a woman has one of three types of surgery to remove the uterus and nearby lymph nodes:
 - The surgeon makes a large *incision* to remove the uterus and lymph nodes.

- The surgeon makes small incisions for a *laparoscope*. A laparoscope is a thin, lighted tube with a lens for viewing. The surgeon uses a tool on the laparoscope to remove the uterus and lymph nodes (*laparoscopic surgery*).
- The surgeon removes the uterus through the vagina and makes small incisions so that a laparoscope may be used to remove the lymph nodes.
- **Radiation therapy and chemotherapy:**
 - For women who have had surgery, doctors are comparing the effectiveness of external beam radiation therapy with that of brachytherapy followed by chemotherapy.
 - Doctors are comparing chemotherapy alone with the combination of chemotherapy, external beam radiation therapy, and brachytherapy.

If you're interested in being part of a clinical trial, talk with your doctor. You may want to read the NCI booklet *Taking Part in Cancer Treatment Research Studies*. It describes how treatment studies are carried out and explains their possible benefits and risks.

NCI's Web site includes a section on clinical trials at **<http://www.cancer.gov/clinicaltrials>**. It has general information about clinical trials as well as detailed information about specific ongoing studies of uterine cancer.

Also, NCI's Cancer Information Service can provide information about clinical trials. Call **1-800-4-CANCER (1-800-422-6237)**. Or chat using **LiveHelp**, NCI's instant messaging service, at **<http://www.cancer.gov/livehelp>**.

Dictionary

Definitions of thousands of terms are on NCI's Web site in NCI's Dictionary of Cancer Terms. You can access it at <http://www.cancer.gov/dictionary>.

Benign (beh-NINE): Not cancerous. Benign tumors may grow larger but do not spread to other parts of the body. Also called nonmalignant.

Biopsy (BY-op-see): The removal of cells or tissues for examination by a pathologist. The pathologist may study the tissue under a microscope or perform other tests on the cells or tissue.

Blood vessel: A tube through which the blood circulates in the body. Blood vessels include a network of arteries, arterioles, capillaries, venules, and veins.

Brachytherapy (BRAY-kee-THAYR-uh-pee): A type of radiation therapy in which radioactive material sealed in needles, seeds, wires, or catheters is placed directly into or near a tumor. Also called implant radiation therapy and internal radiation therapy.

CA-125: A substance that may be found in high amounts in the blood of patients with certain types of cancer, including ovarian cancer. CA-125 levels may also help monitor how well cancer treatments are working or if cancer has come back. Also called cancer antigen 125.

Cancer (KAN-ser): A term for diseases in which abnormal cells divide without control and can invade nearby tissues. Cancer cells can also spread to other parts of the body through the blood and lymph systems.

Carcinoma in situ (KAR-sih-NOH-muh in SY-too): A group of abnormal cells that remain in the place where they first formed. They have not spread. These abnormal cells may become cancer and spread into nearby normal tissue. Also called stage 0 disease.

Cell (sel): The individual unit that makes up the tissues of the body. All living things are made up of one or more cells.

Cervix (SER-vix): The lower, narrow end of the uterus that forms a canal between the uterus and vagina.

Chemotherapy (KEE-moh-THAYR-uh-pee): Treatment with drugs that kill cancer cells.

Clinical trial (KLIH-nih-kul TRY-ul): A type of research study that tests how well new medical approaches work in people. These studies test new methods of screening, prevention, diagnosis, or treatment of a disease. Also called clinical study.

Colorectal cancer (KOH-loh-REK-tul KAN-ser): Cancer that develops in the colon (the longest part of the large intestine) and/or the rectum (the last several inches of the large intestine before the anus).

Contrast material: A dye or other substance that helps show abnormal areas inside the body. It is given by injection into a vein, by enema, or by mouth. Contrast material may be used with x-rays, CT scans, MRI, or other imaging tests.

Corpus: The body of the uterus.

CT scan: A series of detailed pictures of areas inside the body taken from different angles. The pictures are created by a computer linked to an x-ray machine. Also called CAT scan, computed tomography scan, computerized axial tomography scan, and computerized tomography.

Endometrial (EN-doh-MEE-tree-ul): Having to do with the endometrium (the layer of tissue that lines the uterus).

Endometriosis (EN-doh-MEE-tree-OH-sis): A benign condition in which tissue that looks like endometrial tissue grows in abnormal places in the abdomen.

Endometrium (en-doh-MEE-tree-um): The layer of tissue that lines the uterus.

Estrogen (ES-truh-jin): A type of hormone made by the body that helps develop and maintain female sex characteristics and the growth of long bones. Estrogens can also be made in the laboratory. They may be used as a type of birth control and to treat symptoms of menopause, menstrual disorders, osteoporosis, and other conditions.

External radiation therapy (RAY-dee-AY-shun THAYR-uh-pee): A type of radiation therapy that uses a machine to aim high-energy rays at the cancer from outside of the body. Also called external-beam radiation therapy.

Fallopian tube (fuh-LOH-pee-in): A slender tube through which eggs pass from an ovary to the uterus. In the female reproductive tract, there is one ovary and one fallopian tube on each side of the uterus.

Fibroid (FY-broyd): A benign smooth-muscle tumor, usually in the uterus or gastrointestinal tract. Also called leiomyoma.

Fundus: The larger part of a hollow organ that is farthest away from the organ's opening. The bladder, gallbladder, stomach, uterus, eye, and cavity of the middle ear all have a fundus.

Gynecologic oncologist (GY-neh-kuh-LAH-jik on-KAH-loh-jist): A doctor who specializes in treating cancers of the female reproductive organs.

Gynecologist (GY-neh-KAH-loh-jist): A doctor who specializes in treating diseases of the female reproductive organs.

Hormone receptor (HOR-mone reh-SEP-ter): A cell protein that binds a specific hormone. The hormone receptor may be on the surface of the cell or inside the cell. Many changes take place in a cell after a hormone binds to its receptor.

Hormone therapy (HOR-mone THAYR-uh-pee): Treatment that adds, blocks, or removes hormones. For certain conditions (such as diabetes or menopause), hormones are given to adjust low hormone levels. To slow or stop the growth of certain cancers (such as prostate and breast cancer), synthetic hormones or other drugs may be given to block the body's natural hormones. Sometimes surgery is needed to remove the gland that makes a certain hormone. Also called endocrine therapy, hormonal therapy, and hormone treatment.

Hyperplasia (HY-per-PLAY-zhuh): An abnormal increase in the number of normal cells in an organ or tissue.

Hysterectomy (HIS-teh-REK-toh-mee): Surgery to remove the uterus and, sometimes, the cervix. When the uterus and the cervix are removed, it is called a total hysterectomy. When only the uterus is removed, it is called a partial hysterectomy.

Incision (in-SIH-zhun): A cut made in the body to perform surgery.

Internal radiation therapy (in-TER-nul RAY-dee-AY-shun THAYR-uh-pee): A type of radiation therapy in which radioactive material sealed in needles, seeds, wires, or catheters is placed directly into or near a tumor. Also called brachytherapy, implant radiation therapy, and radiation brachytherapy.

Intravenous (IN-truh-VEE-nus): Into or within a vein. Intravenous usually refers to a way of giving a drug or other substance through a needle or tube inserted into a vein. Also called IV.

Laparoscope (LA-puh-ruh-SKOPE): A thin, tube-like instrument used to look at tissues and organs inside the abdomen. A laparoscope has a light and a lens for viewing and may have a tool to remove tissue.

Laparoscopic surgery (LA-puh-ruh-SKAH-pik SER-juh-ree): Surgery done with the aid of a laparoscope. A laparoscope is a thin, tube-like instrument with a light and a lens for viewing. It may also have a tool to remove tissue to be checked under a microscope for signs of disease. Also called laparoscopic-assisted resection.

Lymph node (limf node): A rounded mass of lymphatic tissue that is surrounded by a capsule of connective tissue. Lymph nodes filter lymph (lymphatic fluid), and they store lymphocytes (white blood cells). They are located along lymphatic vessels. Also called lymph gland.

Lymph vessel (limf): A thin tube that carries lymph (lymphatic fluid) and white blood cells through the lymphatic system. Also called lymphatic vessel.

Lymphedema (LIM-fuh-DEE-muh): A condition in which extra lymph fluid builds up in tissues and causes swelling. It may occur in an arm or leg if lymph vessels are blocked, damaged, or removed by surgery.

Lynch syndrome: An inherited disorder in which affected individuals have a higher-than-normal chance of developing colorectal cancer and certain other types of cancer, often before the age of 50. Also called hereditary nonpolyposis colon cancer and HNPCC.

Malignant (muh-LIG-nunt): Cancerous. Malignant tumors can invade and destroy nearby tissue and spread to other parts of the body.

Medical oncologist (MEH-dih-kul on-KAH-loh-jist): A doctor who specializes in diagnosing and treating cancer using chemotherapy, hormonal therapy, biological therapy, and targeted therapy. A medical oncologist often is the main health care provider for someone who has cancer. A medical oncologist also gives supportive care and may coordinate treatment given by other specialists.

Menopausal hormone therapy (MEH-nuh-PAW-zul HOR-mone THAYR-uh-pee): Hormones (estrogen, progesterone, or both) given to women after menopause to replace the hormones no longer produced by the ovaries. Also called hormone replacement therapy and HRT.

Menopause (MEH-nuh-PAWZ): The time of life when a woman's ovaries stop producing hormones and menstrual periods stop. Natural menopause usually occurs around age 50. A woman is said to be in menopause when she hasn't had a period for 12 months in a row. Symptoms of menopause include hot flashes, mood swings, night sweats, vaginal dryness, trouble concentrating, and infertility.

Menstrual period (MEN-stroo-al PEER-ee-od): The periodic discharge of blood and tissue from the uterus. From puberty until menopause, menstruation occurs about every 28 days, but does not occur during pregnancy.

Metastatic (meh-tuh-STA-tik): Having to do with metastasis, which is the spread of cancer from the primary site (place where it started) to other places in the body.

MRI: A procedure in which radio waves and a powerful magnet linked to a computer are used to create detailed pictures of areas inside the body. These pictures can show the difference between normal and diseased tissue. MRI makes better images of organs and soft tissue than other scanning techniques, such as computed tomography (CT) or x-ray. MRI is especially useful for imaging the brain, the spine, the soft tissue of joints, and the inside of bones. Also called magnetic resonance imaging, NMRI, and nuclear magnetic resonance imaging.

Myometrium (my-oh-MEE-tree-um): The muscular outer layer of the uterus.

Oncology nurse (on-KAH-loh-jee): A nurse who specializes in treating and caring for people who have cancer.

Organ: A part of the body that performs a specific function. For example, the heart is an organ.

Ovary (OH-vuh-ree): One of a pair of female reproductive glands in which the ova, or eggs, are formed. The ovaries are located in the pelvis, one on each side of the uterus.

Pap test: A procedure in which cells are scraped from the cervix for examination under a microscope. It is used to detect cancer and changes that may lead to cancer. A Pap test can also show conditions, such as infection or inflammation, that are not cancer. Also called Pap smear and Papanicolaou test.

Pathologist (puh-THAH-loh-jist): A doctor who identifies diseases by studying cells and tissues under a microscope.

Pelvic exam (PEL-vik): A physical exam in which the health care professional will feel for lumps or changes in the shape of the vagina, cervix, uterus, fallopian tubes, ovaries, and rectum. The health care professional will also use a speculum to open the vagina to look at the cervix and take samples for a Pap test.

Pelvis (PEL-vus): The lower part of the abdomen, located between the hip bones.

Polyp (PAH-lip): A growth that protrudes from a mucous membrane.

Progesterone (proh-JES-tuh-RONE): A type of hormone made by the body that plays a role in the menstrual cycle and pregnancy. Progesterone can also be made in the laboratory. It may be used as a type of birth control and to treat menstrual disorders, infertility, symptoms of menopause, and other conditions.

Radiation oncologist (RAY-dee-AY-shun on-KAH-loh-jist): A doctor who specializes in using radiation to treat cancer.

Radiation therapy (RAY-dee-AY-shun THAYR-uh-pee): The use of high-energy radiation from x-rays, gamma rays, neutrons, protons, and other sources to kill cancer cells and shrink tumors. Radiation may come from a machine outside the body (external-beam radiation therapy), or it may come from radioactive material placed in the body near cancer cells (internal radiation therapy). Systemic radiation therapy uses a radioactive substance, such as a radiolabeled monoclonal antibody, that travels in the blood to tissues throughout the body. Also called irradiation and radiotherapy.

Radioactive (RAY-dee-oh-AK-tiv): Giving off radiation.

Registered dietitian (dy-eh-TIH-shun): A health professional with special training in the use of diet and nutrition to keep the body healthy. A registered dietitian may help the medical team improve the nutritional health of a patient.

Reproductive system (REE-proh-DUK-tiv SIS-tem): The organs involved in producing offspring. In women, this system includes the ovaries, the fallopian tubes, the uterus, the cervix, and the vagina. In men, it includes the prostate, the testes, and the penis.

Risk factor: Something that increases the chance of developing a disease. Some examples of risk factors for cancer are age, a family history of certain cancers, use of tobacco products, being exposed to radiation or certain chemicals, infection with certain viruses or bacteria, and certain genetic changes.

Sarcoma (sar-KOH-muh): A cancer of the bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue.

Side effect: A problem that occurs when treatment affects healthy tissues or organs. Some common side effects of cancer treatment are fatigue, pain, nausea, vomiting, decreased blood cell counts, hair loss, and mouth sores.

Supportive care: Care given to improve the quality of life of patients who have a serious or life-threatening disease. The goal of supportive care is to prevent or treat as early as possible the symptoms of a disease, side effects caused by treatment of a disease, and psychological, social, and spiritual problems related to a disease or its treatment. Also called comfort care, palliative care, and symptom management.

Surgeon: A doctor who removes or repairs a part of the body by operating on the patient.

Surgery (SER-juh-ree): A procedure to remove or repair a part of the body or to find out whether disease is present. An operation.

Tamoxifen (tuh-MOK-sih-FEN): A drug used to treat certain types of breast cancer. It is also used to prevent breast cancer in women who have had ductal carcinoma in situ (abnormal cells in the ducts of the breast) and in women who are at a high risk of developing breast cancer. Tamoxifen blocks the effects of the hormone estrogen in the breast.

Tissue (TISH-oo): A group or layer of cells that work together to perform a specific function.

Transvaginal ultrasound (tranz-VA-jih-nul UL-truh-SOWND): A procedure used to examine the vagina, uterus, fallopian tubes, ovaries, and bladder. An instrument is inserted into the vagina that causes sound waves to bounce off organs inside the pelvis. These sound waves create echoes that are sent to a computer, which creates a picture called a sonogram. Also called transvaginal sonography and TVS.

Tumor (TOO-mer): An abnormal mass of tissue that results when cells divide more than they should or do not die when they should. Tumors may be benign (not cancer), or malignant (cancer). Also called neoplasm.

Ultrasound (UL-truh-SOWND): A procedure in which high-energy sound waves are bounced off internal tissues or organs and make echoes. The echo patterns are shown on the screen of an ultrasound machine, forming a picture of body tissues called a sonogram. Also called ultrasonography.

Uterine cancer (YOO-teh-rin KAN-ser): Cancer that forms in tissues of the uterus (the small, hollow, pear-shaped organ in a woman's pelvis in which a fetus develops). Two types of uterine cancer are endometrial cancer (cancer that begins in cells lining the uterus) and uterine sarcoma (a rare cancer that begins in muscle or other tissues in the uterus).

Uterus (YOO-ter-us): The small, hollow, pear-shaped organ in a woman's pelvis. This is the organ in which a fetus develops. Also called womb.

Vagina (vuh-JY-nuh): The muscular canal extending from the uterus to the exterior of the body. Also called birth canal.

X-ray: A type of high-energy radiation. In low doses, x-rays are used to diagnose diseases by making pictures of the inside of the body. In high doses, x-rays are used to treat cancer.

National Cancer Institute Publications

NCI provides publications about cancer, including the booklets and fact sheets mentioned in this booklet. Many are available in both English and Spanish.

You may read these publications online and print your own copy. Also, people in the United States and its territories may order NCI publications:

- **By telephone:** People in the United States and its territories may order these and other NCI publications by calling NCI's Cancer Information Service at **1-800-4-CANCER (1-800-422-6237)**.
- **On the Internet:** Many NCI publications may be viewed, downloaded, and ordered from **<http://www.cancer.gov/publications>**. This Web site also explains how people outside the United States can mail or fax their requests for NCI booklets.

Cancer Treatment and Supportive Care

- *How To Find a Doctor or Treatment Facility If You Have Cancer* (also in Spanish)
- *Radiation Therapy and You* (also in Spanish)
- *Chemotherapy and You* (also in Spanish)
- *Pain Control* (also in Spanish)
- *Eating Hints* (also in Spanish)

Coping with Cancer

- *Taking Time: Support for People with Cancer*

Advanced or Recurrent Cancer

- *Coping With Advanced Cancer*
- *When Cancer Returns*

Life After Cancer Treatment

- *Facing Forward: Life After Cancer Treatment* (also in Spanish)
- *Follow-up Care After Cancer Treatment*
- *Facing Forward: Ways You Can Make a Difference in Cancer*

Complementary Medicine

- *Thinking about Complementary & Alternative Medicine*

Caregivers

- *When Someone You Love Is Being Treated for Cancer: Support for Caregivers*
- *When Someone You Love Has Advanced Cancer: Support for Caregivers*
- *Facing Forward: When Someone You Love Has Completed Cancer Treatment*
- *Caring for the Caregiver: Support for Cancer Caregivers*

Research Studies

- *Taking Part in Cancer Treatment Research Studies*
- *Providing Your Tissue for Research: What You Need To Know*
- *Donating Tissue for Cancer Research: Biospecimens and Biorepositories*

The National Cancer Institute

The National Cancer Institute (NCI), part of the National Institutes of Health, is the Federal Government's principal agency for cancer research and training. NCI conducts and supports basic and clinical research to find better ways to prevent, diagnose, and treat cancer. The Institute also supports education and training for cancer research and treatment programs. In addition, NCI is responsible for communicating its research findings to the medical community and the public.

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