NCCN GUIDELINES FOR PATIENTS®

2019

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Uterine Cancer

Endometrial Cancer
Uterine Sarcoma

Presented with support from: NCCN National Comprehensive Cancer Network FOUNDATION® *Guiding Treatment, Changing Lives.*

Available online at NCCN.org/patients

LEARNING that you have cancer can be overwhelming.

The goal of this book is to help you get the best care. It explains which cancer tests and treatments are recommended by experts in uterine cancer.

The National Comprehensive Cancer Network® (NCCN®) is a not-for-profit alliance of 27 of the world's leading cancer centers. Experts from NCCN® have written treatment guidelines for doctors who treat uterine cancer. These treatment guidelines suggest what the best practice is for cancer care. The information in this patient book is based on the guidelines written for doctors.

This book focuses on the treatment of uterine cancer in adults. Key points of this book are summarized in the related NCCN Quick Guide™. NCCN also offers patient resources on lung, melanoma, and many other cancer types. Visit NCCN.org/patients for the full library of patient books, summaries, and other patient and caregiver resources.

About

National Comprehensive Cancer Network®

These patient guidelines for cancer care are produced by the National Comprehensive Cancer Network® (NCCN®).

The mission of NCCN is to improve cancer care so people can live better lives. At the core of NCCN are the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®). NCCN Guidelines® contain information to help health care workers plan the best cancer care. They list options for cancer care that are most likely to have the best results. The NCCN Guidelines for Patients® present the information from the NCCN Guidelines in an easy-to-learn format.

Panels of experts create the NCCN Guidelines. Most of the experts are from NCCN Member Institutions. Their areas of expertise are diverse. Many panels also include a patient advocate. Recommendations in the NCCN Guidelines are based on clinical trials and the experience of the panelists. The NCCN Guidelines are updated at least once a year. When funded, the patient books are updated to reflect the most recent version of the NCCN Guidelines for doctors.

For more information about the NCCN Guidelines, visit NCCN.org/clinical.asp.

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NCCN FOUNDATION®
Guiding Treatment, Changing Lives.

NCCN Foundation was founded by NCCN to raise funds for patient education based on the NCCN Guidelines. NCCN Foundation offers guidance to people with cancer and their caregivers at every step of their cancer journey. This is done by sharing key information from leading cancer experts. This information can be found in a library of NCCN Guidelines for Patients® and other patient education resources. NCCN Foundation is also committed to advancing cancer treatment by funding the nation's promising doctors at the center of cancer research, education, and progress of cancer therapies.

For more information about NCCN Foundation, visit NCCNFoundation.org.

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FORCE: Facing Our Risk of Cancer Empowered
As the nation's leading organization serving the hereditary cancer community, FORCE is pleased to endorse the NCCN Guidelines for Patients on uterine cancer. This guide provides valuable, evidence-based, expert-reviewed information on the standard of care, empowering patients to make informed decisions about their treatment.
www.facingourrisk.org

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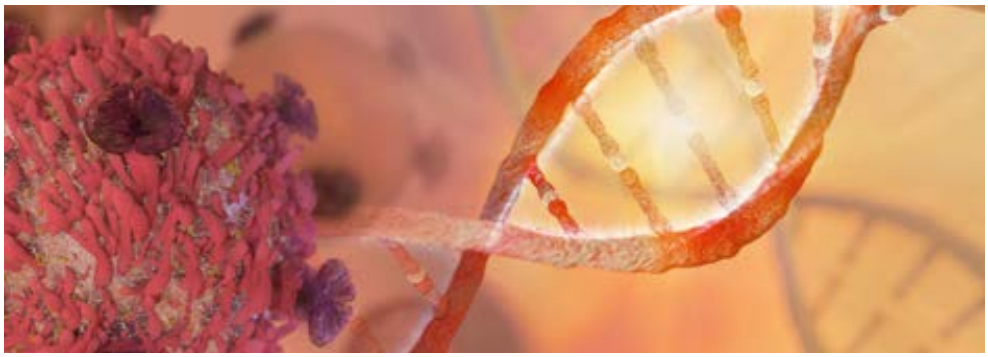

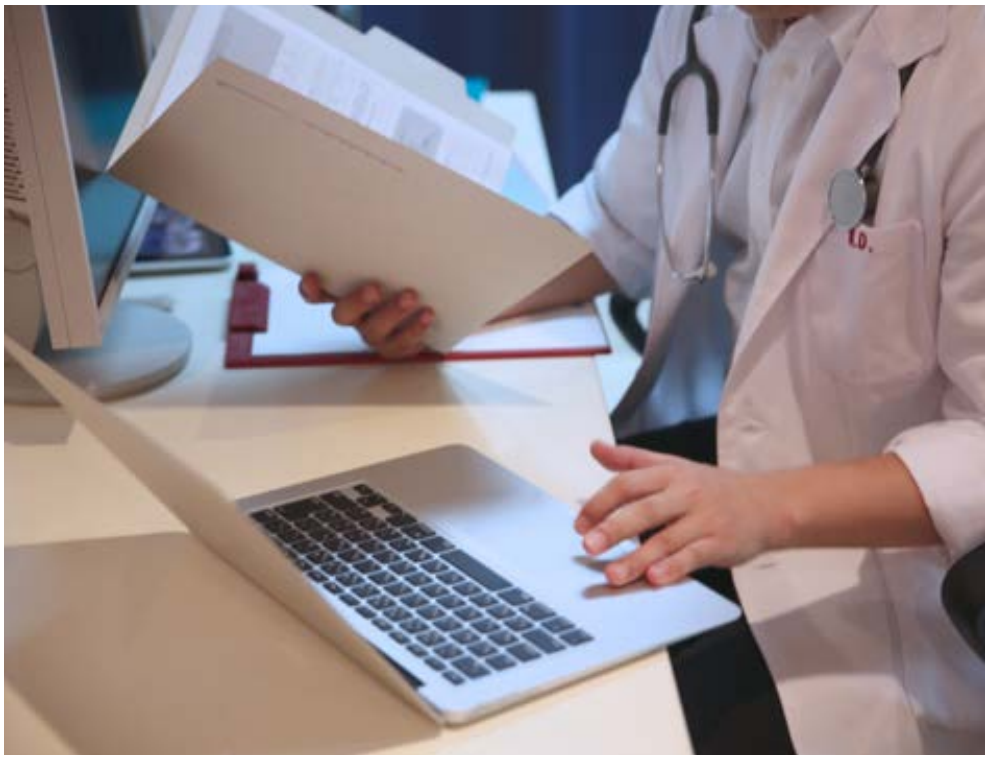

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Who should read this book?

This book is about treatment for uterine cancer in adults. People with uterine cancer and those who support them—caregivers, family, and friends—may find this book helpful. It may help you discuss and decide with doctors what care is best.

Are the book chapters in a certain order?

Starting with **Part 1** may be helpful. It explains what uterine cancer is. Read **Part 2** to learn about how uterine cancer is staged. **Part 3** talks about the health tests you may need to have in order to plan the best treatment for you. The main ways to treat uterine cancer are explained in **Part 4**. The two main kinds of uterine cancer are endometrial cancer and uterine sarcoma. Recommendations for treating these cancer types are presented in **Parts 5** and **6**. The last chapter is **Part 7**. This chapter offers help for making treatment decisions.

Does this book include all options?

This book includes treatment options for most people. Your treatment team can point out what applies to you. They can also give you more information. While reading, make a list of questions to ask your doctors.

The treatment options are based on science and the experience of NCCN experts. However, their recommendations may not be right for you. Your doctors may suggest other options based on your health and other factors. If other options are given, ask your treatment team questions.

Help! What do the words mean?

In this book, many medical words are included. These are words you will likely hear from your treatment team. Most of these words may be new to you, and it may be a lot to learn.

Don't be discouraged as you read. Keep reading and review the information. Feel free to ask your treatment team to explain a word or phrase that you don't understand. Words that you may not know are defined in the text or in the *Dictionary*. *Acronyms* are also defined when first used and in the *Glossary*. One example is DNA for **d**eoxyribo**n**ucleic **a**cid.

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Uterine cancer basics

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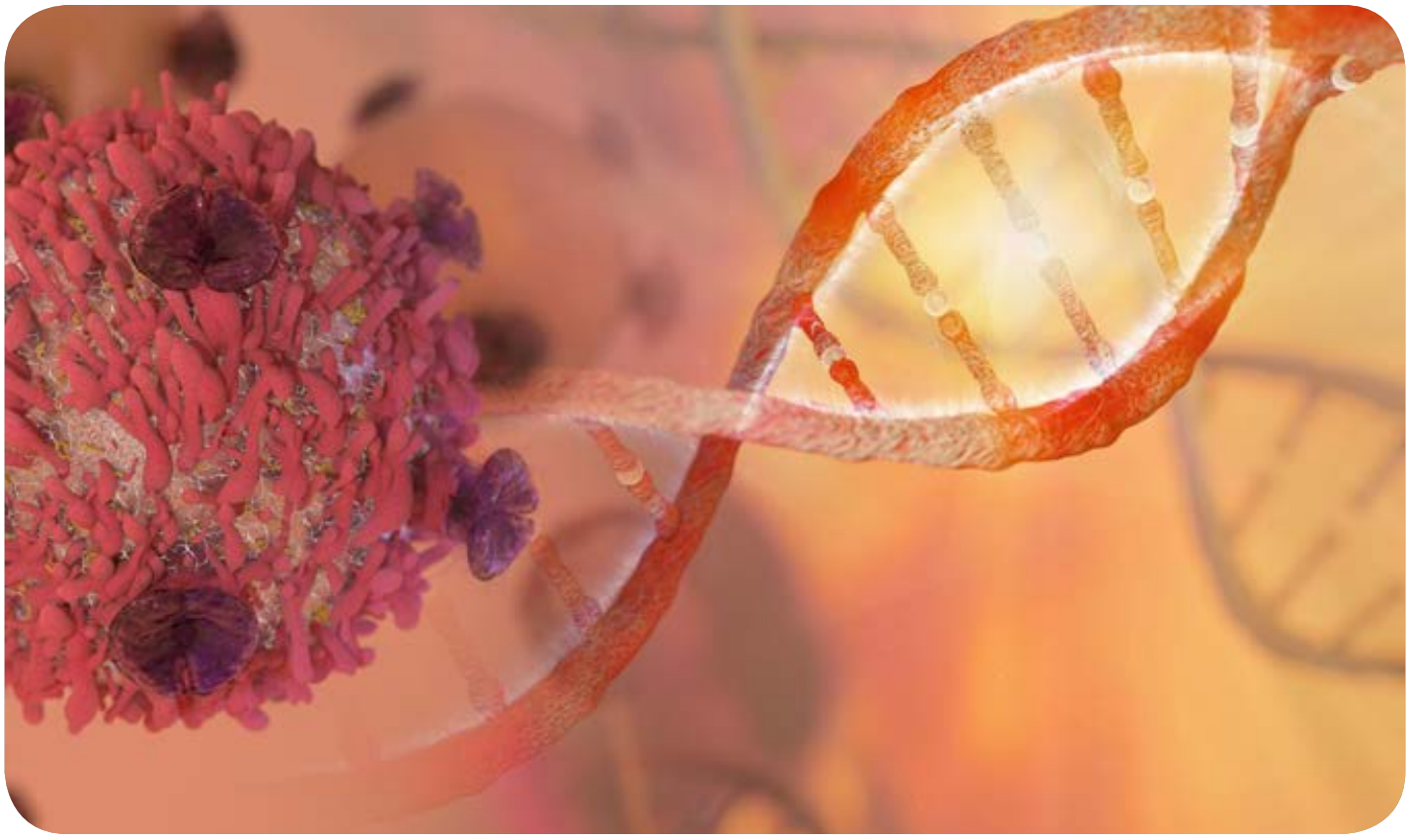


You've learned that you have uterine cancer. It's normal to feel shocked and confused. This chapter goes over the basics of cancer and how it affects the uterus. This first look at your cancer will help prepare you for next steps.

The uterus

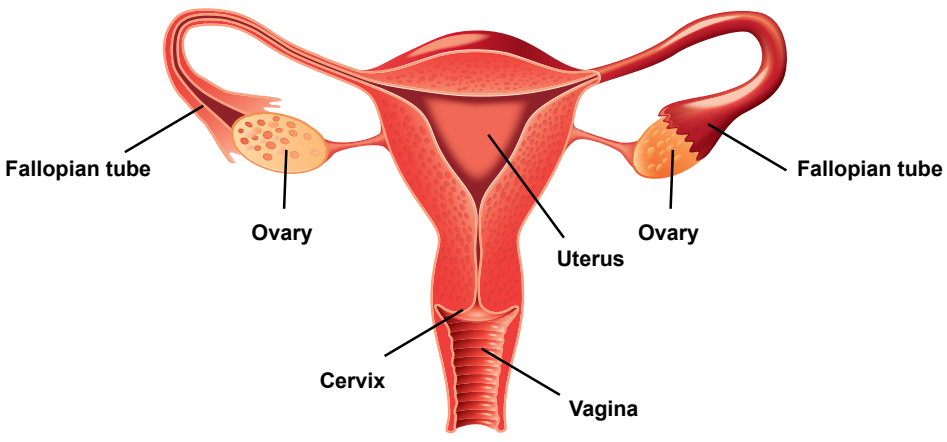
The uterus is an important part of a woman's reproductive system. It is normally about the size and shape of a pear, and is hollow in the middle. Also called the womb, the uterus is where a baby grows and develops before being born. The other parts of the female reproductive system are the ovaries, the fallopian tubes, the cervix, and the vagina. **See Figure 1.**

There is one ovary and one fallopian tube on each side of the uterus. The fallopian tubes connect to the top part of the uterus. The lower part, or the opening to the womb, is called the cervix. The cervix connects the uterus to the vagina. Even though the cervix is part of the uterus, cancer of the cervix (cervical cancer) is diagnosed and treated differently than uterine cancer. Treatment of cervical cancer isn't covered in this book.

To understand uterine cancer, it helps to understand the structure of the uterus. The uterus has three main layers. They are described next and shown in **Figure 2.**

Figure 1.
The female reproductive system

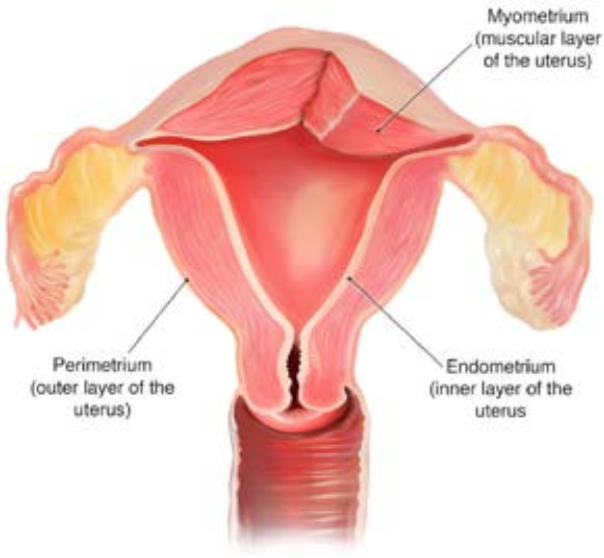
The uterus, cervix, vagina, fallopian tubes, and ovaries make up the female reproductive system. The uterus is where a baby grows and develops before being born.



- The perimetrium, or serosa, is the thin, outer lining of the uterus.
- The myometrium is the muscular, middle layer of the uterus wall.
- The endometrium is the thin layer of tissue that lines the inside of the uterus.

Figure 2. The three layers of the uterus

Endometrial cancer starts in the lining of the uterus, called the endometrium. Uterine sarcoma can start in the muscular layer (the myometrium), or in other supporting tissues.



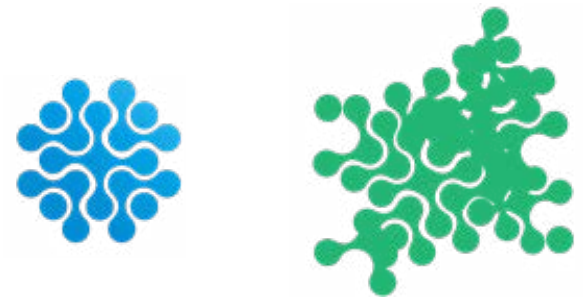
How cancer works

Your body is made of over 30 trillion cells. All cells have built-in rules that tell them how to act. These rules, or instructions, are called genes. Genes are a part of your DNA (**d**eoxyribo**n**ucleic **a**cid). Changes (called mutations) in genes cause normal cells to become cancer cells.

Cancer cells don't act like normal cells. **See Figure 3**. The three most important differences between cancer cells and normal cells are:

- **Normal cells** grow and then divide to make new cells when needed. They also die when old or damaged. **Cancer cells** make new cells that aren't needed and don't die quickly when old or damaged. Over time, cancer cells form a lump called a tumor.
- **Normal cells** listen to signals from nearby cells telling them to "stop" when they get too close. **Cancer cells** ignore the "stop" signals from nearby cells and invade nearby tissues.
- **Normal cells** stay in the area of the body where they belong. For example, stomach cells stay in the stomach. **Cancer cells** can travel to other parts of your body (metastasize). They can then grow and make more tumors in the new area of your body.

Figure 3. Key differences between normal cells and cancer cells



Normal cells	Cancer cells
✓ Make new cells as needed; die if old/ damaged	→ Grow out of control, forming a tumor over time
✓ Stop when they get too close to other cells	→ Ignore other cells and invade nearby tissues
✓ Stay where they belong in the body	→ Can spread and make new tumors

Two main types of uterine cancer

There are two main types of cancer that start in the uterus:

- Endometrial carcinoma (usually just called endometrial cancer)
- Uterine sarcoma

The differences between these two types of uterine cancer are described next.

Endometrial cancer

Endometrial cancer is much more common than uterine sarcoma, and is often found before it has spread beyond the uterus. It is called endometrial cancer because it starts in the endometrium, which is the inner lining of the uterus.

There are different types of endometrial cancer. **See Figure 4**. Before finding out that you have endometrial cancer, you may have had an ultrasound. You may have also had a small sample of tissue removed for testing (a biopsy). That tissue sample was then analyzed by an expert in studying cells and tissues under a microscope, called a pathologist. The pathologist determines the specific type of cancer.

The most common type of endometrial tumor is called an *endometrioid* tumor. Most of the information you'll find in this book and elsewhere on endometrial cancer applies to endometrioid tumors.

SNAPSHOT

Endometrial cancer

- ✓ Most common cancer of the female reproductive system in the U.S.
- ✓ Affects mainly postmenopausal women
- ✓ Starts in the lining of the uterus (the endometrium)
- ✓ Can often be cured with treatment
- ✓ The most effective treatment is surgery

Uterine sarcoma

- ✓ Much less common and harder to treat than endometrial cancer
- ✓ Starts in the supporting tissues or muscles of the uterus
- ✓ Affects mainly postmenopausal women
- ✓ The most effective treatment is surgery

There are other, less common types of endometrial cancer. They are considered high-risk types because they grow more quickly and are harder to treat. The names of these high-risk endometrial cancers are:

- Serous carcinoma
- Clear cell carcinoma
- Carcinosarcoma, also known as MMMT (**m**alignant **m**ixed **M**üllerian **t**umor)

Because of the more aggressive nature of these cancers, they are treated differently than most endometrioid tumors. These types are addressed separately in Part 5.

After being diagnosed with cancer, it is normal to wonder *why* you got it. Some cancers are hereditary, meaning a higher risk was passed down to you by your parents through your genes. For other cancers, your lifestyle plays a bigger role than your genes. For many types of cancer, both your genes and your lifestyle can play a role in whether you get that kind of cancer. The medical term for something that increases the chance of getting a disease is called a risk factor.

Many of the risk factors for endometrial cancer are related to having too much estrogen in the body. **See Figure 5** for factors that can increase a woman's risk of getting endometrial cancer.

Figure 4. Types of uterine cancer

Endometrial cancer

- **Endometrioid carcinoma (most common)**
- **Serous carcinoma**
- **Clear cell carcinoma**
- **Carcinosarcoma, also known as malignant mixed Müllerian tumor (MMMT)**
- **Undifferentiated/dedifferentiated carcinoma**

Uterine sarcoma

- **uLMS (*u*terine *l*eio*m*yo*s*arcoma)**
- **ESS (endometrial *s*tromal *s*arcoma)**
- **UUS (*u*ndifferentiated *u*terine *s*arcoma)**

Uterine sarcoma

Uterine sarcoma comes from muscular tumor cells that form in the uterus. This type of uterine cancer is rarer and harder to treat than endometrial cancer. Like endometrial cancer, there are also different types of uterine sarcomas. **See Figure 4**. The following types of uterine sarcomas are discussed in this book:

- uLMS (**u**terine **l**eio**m**yo**s**arcoma)
- ESS (**e**ndometrial **s**tromal **s**arcoma)
- UUS (**u**ndifferentiated **u**terine **s**arcoma)

There are other, even rarer types of uterine sarcomas called soft tissue sarcomas. They include adenosarcomas, PEComas, and rhabdomyosarcomas. These types are not covered in this book. See the *NCCN Guidelines for Patients®: Soft Tissue Sarcoma* to learn more.

Figure 5. Endometrial cancer risk factors

Many of the risk factors for endometrial cancer are related to having too much of the hormone estrogen in the body. Obesity is a major risk factor because fatty tissue in the body can change natural steroids in your body into estrogen.

Should I have been getting tested for uterine cancer?

No. Testing for a disease when you don't have any symptoms is called **screening**. For example, a Pap smear is used to screen for cervical cancer and a mammogram is used to screen for breast cancer. There is currently no screening test for endometrial cancer or uterine sarcoma.

Review

- The uterus is part of the female reproductive system. A baby grows and develops in the uterus before being born.
- There are three main layers of the uterus. From the inside out, the layers are: the endometrium, the myometrium, and the perimetrium (serosa).
- Cancer cells form a tumor over time because they don't die like normal cells.
- Cancer cells can spread to other parts of your body and make new tumors.
- There are two major types of cancer that start in the uterus: endometrial carcinoma (usually just called endometrial cancer) and uterine sarcoma.
- Endometrial cancer is common and is often found early, before it has spread from the uterus.
- Uterine sarcoma is rare and more aggressive than endometrial cancer.

2
Cancer staging

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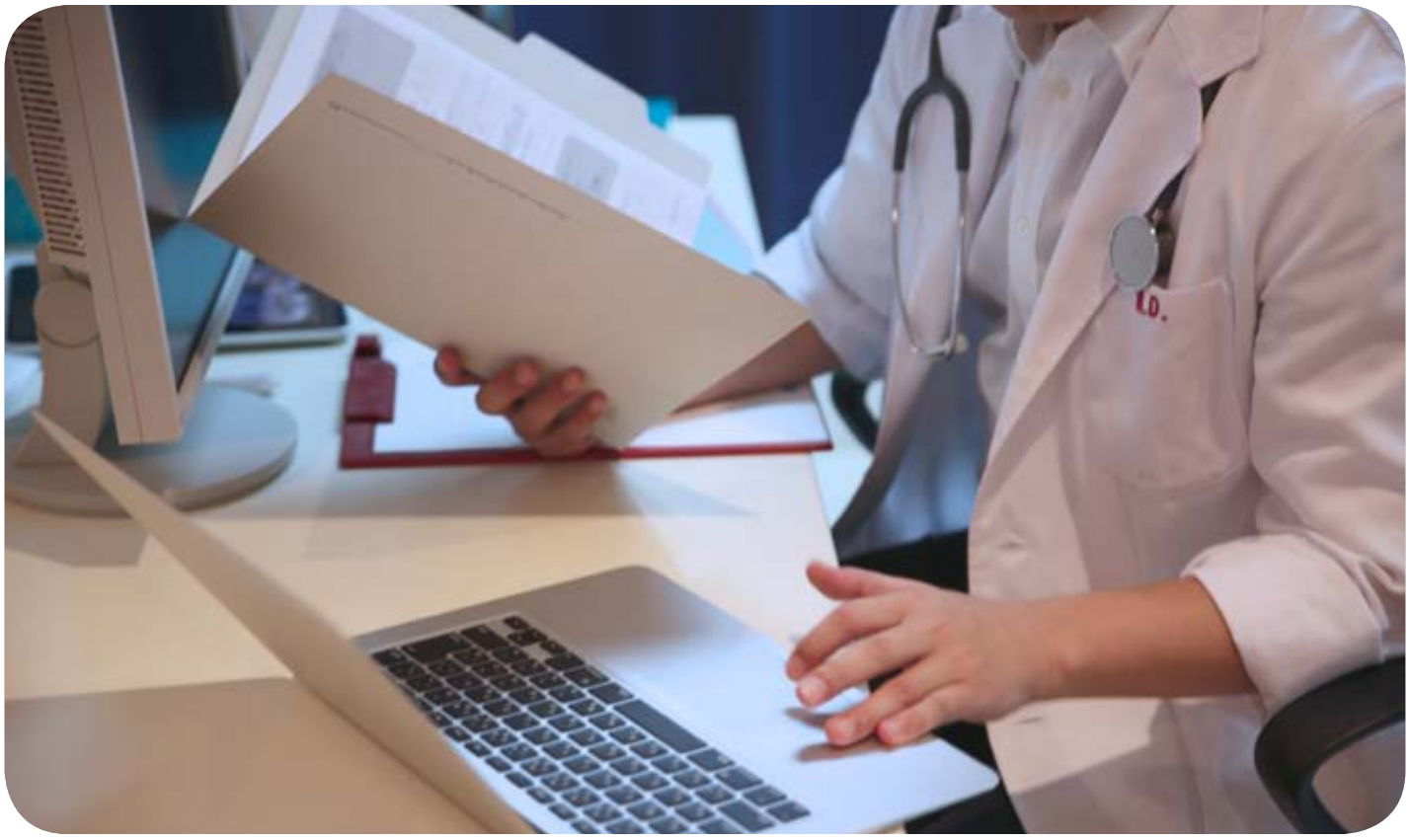

You have likely heard the word “stage” when talking about cancer. The stage is a snapshot of how far the cancer has grown so far. Your doctors use the stage of your cancer to decide which tests and treatments will help you most. This chapter explains the systems used to stage uterine cancer.

About uterine cancer staging

There are two systems used to stage uterine cancer—the FIGO (**I**nternational **F**ederation of **G**ynecology and **O**bstetrics) system and the AJCC (**A**merican **J**oint **C**ommittee on **C**ancer) TNM (**t**umor, **n**ode, **m**etastasis) system. Both systems use the following key pieces of information about your cancer in order to give it a stage:

- The size of the tumor
- Whether any lymph nodes have cancer
- Whether the cancer has spread to other parts of your body (metastasized)

There are four main stages of endometrial cancer and uterine sarcoma. The stages of each are described in more detail next. In general, people with earlier cancer stages have better outcomes, but not always. It is important to keep in mind that some people will do better than expected for their stage, and some people will do worse.

Cancer is usually staged twice. The first rating is done before treatment and is called the clinical (or baseline) stage. The second rating is done after treatment, such as surgery, and is called the pathologic stage.

Endometrial cancer stages

There are four main stages of endometrial cancer in the FIGO staging system: I, II, III, and IV. Stages I, III, and IV are broken down into sub-stages that have letters and sometimes numbers. Examples are stage IIIB and stage IIIC2.

Stage I	The tumor is in the main part of the uterus. There may be cancer in the glands (but not the connective tissue) of the cervix.
IA	The tumor is only in the endometrium, or has grown less than halfway through the muscle layer of the uterus (the myometrium).
IB	The tumor has grown more than halfway through the myometrium.

Stage II	The tumor has grown into the connective tissue of the cervix (the lower part of the uterus).

Stage III	Cancer has spread beyond the uterus, and there may be cancer in nearby lymph nodes.
IIIA	The tumor has entered the outer layer of the uterus, the ovaries, or the fallopian tubes.
IIIB	There is cancer in the vagina, or in the fat and connective tissue around the uterus.
IIIC1	There is cancer in the lymph nodes closest to the uterus (the pelvic lymph nodes).
IIIC2	There is cancer in the lymph nodes near the bottom of the spine (the para-aortic lymph nodes).

Stage IV	Cancer has spread to the bladder, to the intestines, or to areas far from the uterus.
IVA	Cancer has spread to the inner layer of the bladder or the intestines.
IVB	Cancer has spread to areas far from the uterus, such as the abdomen, the bones, or the lungs. The abdomen includes the pancreas, stomach, intestines, liver, and gallbladder.

Uterine sarcoma stages

There are four main stages of uterine sarcoma in the FIGO staging system: I, II, III, and IV. All of the stages are broken down into sub-stages that have letters (stage IIIA, for example).

Stage I	The tumor is small and only in the uterus.
IA	The tumor is 5 centimeters (about 2 inches) or smaller.
IB	The tumor is bigger than 5 centimeters (about 2 inches).

Stage II	The tumor has spread beyond the uterus, but is still in the pelvis.
IIA	The tumor has entered the ovaries or the fallopian tubes.
IIB	The tumor has also entered other tissues in the pelvis.

Stage III	There is cancer in the abdomen and possibly in nearby lymph nodes.
IIIA	The tumor has grown into one area of the abdomen.
IIIB	The tumor has grown into two different areas of the abdomen.
IIIC	There is cancer in nearby lymph nodes.

Stage IV	There is cancer in the bladder or rectum, and possibly in areas far from the uterus.
IVA	The tumor has grown into the bladder or the rectum.
IVB	Cancer has spread to areas far from the uterus, such as the lungs.

Review

- The stage describes how much cancer there is in the body and where it has spread.
- Endometrial cancer and uterine sarcoma are staged differently. Both types of uterine cancer have four main stages.
- To stage uterine cancer, doctors use the extent of the tumor (for endometrial staging) or size of the tumor (for sarcoma staging), whether there is cancer in lymph nodes, and whether the cancer has spread beyond the uterus.

3
First steps

21 Testing before treatment
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27 Review

Your doctors will make a treatment plan just for you. First, they will need to gather information about your unique cancer and your general health. This chapter goes over the tests you may need to have done and other steps needed to create your treatment plan.

Testing before treatment

Health history and physical exam

Your doctor will need to know a lot about your past and current health. He or she will ask you about:

- Illnesses, diseases, and surgeries you've had
- Medicines that you take (prescription or over-the-counter)
- Your lifestyle (your diet, how much exercise you get, whether you smoke or drink alcohol)
- Symptoms that could be related to uterine cancer, such as vaginal bleeding

Your doctor will also do a physical exam of your body, which may include:

- Checking your vital signs (blood pressure, heart rate, breathing rate, and body temperature) and assessing your overall appearance
- Examining your head and neck
- Feeling and/or listening to the organs in your abdomen, including your liver and stomach
- Performing a pelvic examination to check the size and relaxation of your uterus

Is endometrial cancer hereditary?

Not usually. Most cases of endometrial cancer are caused by random (non-hereditary) mutations in DNA. Only about 5% of women (5 out of 100) get endometrial cancer because they inherited a higher risk for it. This includes women with an inherited disorder called Lynch syndrome. These women have a high risk (about 60%) of getting endometrial cancer in their lifetime. Women with Lynch syndrome should be monitored closely and counseled on ways to reduce the risk of getting endometrial and other cancers.

Genetic evaluation

Some health problems run in families. Your doctor will want to know if you have a family history of cancer, or of other diseases that can raise your risk of getting cancer. An inherited disease called Lynch syndrome (hereditary non-polyposis colorectal cancer syndrome) is strongly linked to endometrial and colon cancers. In women with Lynch syndrome, endometrial cancer tends to start about 10 to 20 years earlier than it does in women without an inherited risk.

To figure out who should be tested for Lynch syndrome, the tumor is tested for a defect in the DNA's MMR (**m**is**m**atch **r**epair) system. This test is described later in this chapter. NCCN experts recommend that all women with endometrial cancer undergo DNA MMR testing, especially women younger than age 50. Women with Lynch syndrome should be monitored closely and counseled on ways to reduce the risk of getting endometrial and other cancers.

Blood tests

A CBC (**c**omplete **b**lood **c**ount) is a common blood test. It gives important information about the numbers and kinds of cells in the blood, especially red blood cells, white blood cells, and platelets.

You may also have a blood test called a chemistry profile. It measures the amount of certain substances in the blood, such as metabolites, electrolytes, fats, and proteins. This test gives important information about how well your kidneys, liver, and other organs are working.

Some endometrial cancers release a substance called CA-125 (**c**ancer **a**ntigen **125**) into the blood. A high level of CA-125 may mean that the cancer has spread beyond the uterus. CA-125 testing is also used to see if treatment is working. This test isn't commonly used to diagnose endometrial cancer, and not all patients need this test.

What to expect: CT scan

- ✓ You will lie face-up on a table that moves through a tunnel-like machine. **See Figure 7**.
- ✓ Contrast dye ("contrast" for short) will be used to see everything more clearly.
- ✓ The dye will be injected into your vein or mixed with a liquid you drink.
- ✓ The contrast may cause you to feel flushed or get hives.
- ✓ You will be alone during the scan, but a technician will be nearby. You will be able to hear and talk to the technician.
- ✓ You may hear buzzing or clicking during the scan.
- ✓ Tell your doctor if you get nervous in tight spaces.

Imaging tests

Chest x-ray

There is a good chance your doctor may want you to have a chest x-ray. This is a very common imaging test. The purpose is to look for signs of disease in and around the chest. X-rays use a very small amount of radiation and are painless. If the x-ray shows any abnormal or suspicious areas, you may need to have additional imaging tests. **See Figure 6**.

CT scan

Your doctor may want to do a CT (**c**omputed **t**omography) scan of your chest, stomach, and maybe your pelvis. A CT scan is a more detailed kind of x-ray. It takes a lot of pictures, or images, from different angles. A computer then combines the images to make 3-D (**t**hree-**d**imensional) pictures.

During the scan, you will lie face up on a table that moves through a big tunnel-like machine. **See Figure 7**. To see everything better, a liquid called contrast dye ("contrast" for short) will be used. The dye will be injected into your vein and also mixed with a liquid you drink.

Figure 6.
Chest x-ray

This common imaging test is used to look for signs of disease in and around the chest.

Figure 7.
CT scan

A CT scan is a more detailed kind of x-ray. It takes a lot of pictures, or images, from different angles. A computer then combines the images to make 3-D pictures.

PET/CT scan

Sometimes CT is combined with another imaging test called PET (**p**ositron **e**mission **t**omography). PET uses small amounts of radioactive materials called radiotracers. About an hour before the scan, you will be injected with a sugar radiotracer. The radiotracer gives off a small amount of energy that can be seen by the imaging machine. Cancer appears brighter in the pictures because cancer cells use sugar more quickly than normal cells.

MRI

MRI (**m**agnetic **r**esonance **i**maging) is a medical imaging procedure that uses strong magnetic fields and radio waves to make pictures of areas inside the body. MRI is especially good at making clear pictures of areas of soft tissue inside the body. Unlike a CT scan or chest x-ray, MRI does not use radiation. **See Figure 8**.

Figure 8.
MRI machine

MRI makes pictures of areas inside the body without using radiation.

Imaging tests: What's the difference?

X-ray

- Painless and noninvasive.
- Uses a small amount of radiation to take pictures of the inside of the body.
- If abnormal areas are seen, a CT scan or an MRI may be ordered.

CT scan

- Painless and noninvasive.
- Tunnel-shaped machine that moves in circles as you pass through it.
- Usually ordered if an x-ray shows something abnormal.
- Uses more radiation than an x-ray.
- Takes many pictures from different angles, which are then used to make 3-D views of the inside of the body.

MRI

- Painless and noninvasive.
- Looks similar to a CT machine.
- Doesn't use radiation.
- Uses a powerful magnet and radiofrequency pulses to make detailed pictures of the inside of the body.
- Usually shows abnormal areas more clearly than CT and x-ray.
- May be noisier and take longer than a CT scan.

Testing after surgery

Tumor marker testing

Just like each person's DNA is unique, each person's cancer is unique. This means that a treatment that helps one person might not help you. To find out if certain treatments might help you, your doctor may offer you tumor marker testing. This is also called biomarker (short for biological marker) testing.

Tumor markers can be substances, like molecules or proteins, that are made by your body because you have cancer. Tumor markers can also be processes, such as the way your DNA "acts" that makes it unique. To find out if your cancer has any markers, the primary tumor removed during surgery is tested in a laboratory.

MSI or MMR testing

Some people have a problem with their genes that makes them unable to fix damaged DNA. In normal cells, a process called MMR (**m**is**m**atch **r**epair) fixes errors that happen when the DNA divides and makes a copy of itself. If a cell's MMR system isn't working right, errors build up and cause the DNA to become unstable. This is called MSI (**m**icro**s**atellite **i**nstability).

There are two kinds of laboratory tests for this genetic defect. Depending on which method is used, the result will either be MSI-H (**m**icro**s**atellite **i**nstability **h**igh) or dMMR (**m**is**m**atch **r**epair **d**eficient) if you have this genetic defect. Both results mean the same thing.

One reason for testing for this tumor marker in women with endometrial cancer is to find out if testing for Lynch syndrome should be done. Another reason is to determine if treatment with an immune checkpoint inhibitor called pembrolizumab (Keytruda®) may help you. If your cancer is MSI-H or dMMR, it may mean that treatment with

Your treatment team

Treating uterine cancer takes a team of doctors and other experts. Your treatment team may include a:

- ✓ **Gynecologic oncologist**
  An expert in female reproductive cancers
- ✓ **Pathologist**
  An expert in testing tissue to find disease
- ✓ **Radiologist**
  An expert in reading imaging tests
- ✓ **Medical oncologist**
  An expert in cancer drugs
- ✓ **Radiation oncologist**
  An expert in radiation treatment

pembrolizumab might be helpful if chemotherapy fails.

Estrogen receptor testing
Some cancer cells have a protein that estrogen can attach to, called an estrogen receptor. Once attached, the estrogen might help the cancer grow. For some women with endometrial cancer, it is helpful to know if the tumor cells have estrogen receptors because it may be possible to prevent the estrogen from attaching. To know whether a tumor has estrogen receptors, a small piece of the tumor is tested in a laboratory. If the tumor cells do have estrogen receptors, the cancer is called estrogen receptor positive.

Not every woman with uterine cancer will have this test. It is recommended by NCCN experts for women with stage III or IV endometrial cancer, or women whose endometrial cancer has returned after a cancer-free period. It is recommended by NCCN experts for all women with a uterine sarcoma.

Review

- You will need to have some tests to help your doctors plan the best treatment for you.
- Having a physical exam and providing a complete health history are important steps before starting treatment.
- Some women will have their blood tested for a substance called CA-125. This test can be used to help determine whether cancer has spread beyond the uterus and whether treatment is working.
- Imaging tests used for uterine cancer may include chest x-ray, CT, PET, and MRI. Not every woman will need all of these.
- Lynch syndrome is an inherited disorder that greatly increases a woman's risk of getting endometrial cancer.
- DNA MMR testing and estrogen receptor testing are done after surgery using the tumor that was removed.
- NCCN experts recommend that all women with endometrial cancer have their tumor tested for problems with the DNA MMR system. This test is used to determine who should be tested for Lynch syndrome.
- NCCN experts recommend estrogen receptor testing for:
  - Women with stage III or IV endometrial cancer
  - Women whose endometrial cancer has come back after a cancer-free period
  - All women with a uterine sarcoma.

4
Treatments for uterine cancer

29 Surgery
30 Radiation therapy
32 Chemotherapy
34 Hormone therapy
35 Targeted therapy
36 Immunotherapy
36 Clinical trials
37 Review

In this chapter, the main ways to treat uterine cancer are described. Knowing what a treatment is will help you understand your options. Not every person will need every treatment described in this chapter. The best treatments for you will depend on the cancer stage.

Surgery

Surgery is a major treatment for uterine cancer. It's actually two surgeries done at the same time. The medical names for the surgeries are *total hysterectomy* and *bilateral salpingo-oophorectomy*. A total hysterectomy is surgery to remove the whole uterus, including the cervix (the lower part of the uterus). A bilateral salpingo-oophorectomy is surgery to remove both ovaries and both fallopian tubes. There are other surgeries used to treat uterine cancer, but total hysterectomy and bilateral salpingo-oophorectomy are the most common. All of the surgeries are described below and shown in **Figure 9**.

The most commonly used surgeries for uterine cancer are:

- **Total hysterectomy:** The uterus (including the cervix) is removed.
- **Bilateral salpingo-oophorectomy:** Both ovaries and both fallopian tubes are removed.

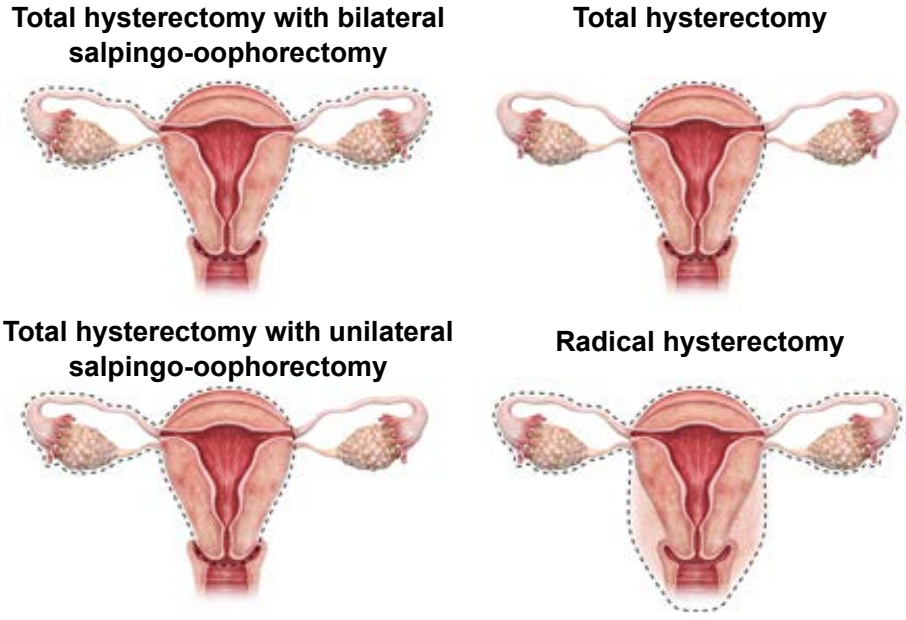


Figure 9.
Types of hysterectomy

The dotted lines show which organs of the reproductive system are removed with each type of surgery.

Less commonly used surgeries for uterine cancer include:

- **Supracervical hysterectomy:** The uterus (not including the cervix) is removed.
- **Radical hysterectomy:** The uterus, the cervix, some of the tissues next to the cervix, and part of the vagina are removed.
- **Unilateral salpingo-oophorectomy:** One ovary and one fallopian tube are removed.

When possible, having minimally invasive surgery is best. This means that only a few small cuts are made into your body to do the surgery. Minimally invasive surgery is preferred because there is usually less pain and scarring. Also, the time it takes to recover is usually shorter compared to surgery that uses a larger cut through the abdomen.

Sometimes the tumor ends up being larger than expected. If the surgeon decides that the tumor cannot be removed completely, he or she will try to remove as much of it as possible. This is called debulking. When it is safe, debulking is a good idea because it may mean that other treatments have a better chance of killing the leftover tumor cells.

Surgical staging

During surgery, your doctor will do more than just remove the uterus, ovaries, and fallopian tubes.

- Your surgeon will look very closely at the tissues and organs closest to the pelvis for signs of cancer, and take samples of any suspicious areas for testing.
- Your surgeon may put fluid in the open space of your abdomen and then remove it to see if it has cancer cells. This is called *peritoneal washing*.
- Your surgeon may remove lymph nodes to check them for cancer. This is called *lymph node sampling* or *lymph node biopsy*.

All of this information gained first-hand during surgery is used, along with any tests done before surgery, to decide what stage the cancer is. This process is called *surgical staging*. A big benefit of surgical staging is that it helps your doctors decide if you should have more treatment after surgery.

Radiation therapy

Radiation therapy is a major treatment for both endometrial cancer and uterine sarcoma. The three main ways that radiation is used to treat uterine cancer are described next.

External beam radiation therapy

Radiation therapy uses high-energy waves similar to x-rays to kill cancer cells. The type of radiation used most often is called EBRT (**e**xternal **b**eam **r**adiation **t**herapy). In EBRT, a large machine aims radiation at the part of your body where the tumor is. The radiation passes through your skin and other tissue to reach the tumor. **See Figures 10 and 11**.

Internal radiation therapy

Another type of radiation therapy used for treating uterine cancer is called internal radiation, or brachytherapy. It is called “internal” because the cancer-fighting radioactive material is put inside your body, either directly into the tumor or close to it. The radioactive material is sealed inside tiny “seeds” about the size of a grain of rice. For the treatment of endometrial cancer, the seeds are usually placed in the vagina 6–8 weeks after the hysterectomy.

Intraoperative radiation therapy

During surgery, your doctor may treat the cancer directly using radiation therapy. This is called

intraoperative radiation therapy. After removing the tumor, a powerful dose of radiation is directed at the area where the tumor was. This helps kill the microscopic cancer cells that may have been left behind. Because the radiation is only aimed at the cancer site directly (and doesn't have to go through skin or other tissue), less damage is done to the surrounding areas.

Figure 10. External beam radiation therapy

Radiation therapy uses high-energy waves similar to x-rays to kill cancer cells.

Figure 11. External radiation machine

A large machine aims radiation at the tumor, passing through skin and other tissue to reach it.

What to expect: Radiation therapy

- ✓ You will first have a planning session called a simulation. You will be placed in the treatment position, and a CT scan will be done. You will need to lie on your back and stay very still. You may get fitted for a prop to help you stay still during the radiation sessions. The CT scan images will be used to make your radiation plan. The plan will describe the best radiation dose for you, as well as the number of sessions you will need.
- ✓ You may feel very tired after radiation therapy.

Chemotherapy

Chemotherapy ("chemo" for short) is treatment with drugs to kill cancer cells. Most chemotherapy drugs are liquids that are slowly injected into a vein. The drugs travel in your bloodstream to treat cancer throughout your body. Treatments that affect the whole body are called *systemic*. You are most likely to have a combination of two or three chemotherapy drugs. Combinations of chemotherapy drugs are called *regimens*. Regimens commonly used to treat endometrial cancer and uterine sarcoma are shown in Guide 1. Please keep the following things in mind:

- Some of the drugs included in regimens may also be used by themselves.
- The individual chemotherapy drugs and/or regimens you are treated with depend (in part) on the type of tumor you have and other features of your cancer.
- There are other chemotherapy drugs and regimens not shown in Guide 1 that may be right for you.

Chemotherapy can be given in different settings. Many people get chemotherapy at cancer centers. **See Figure 12**.

Chemotherapy is given in cycles of treatment days followed by days of rest. This allows your body to recover before the next cycle. For example, you might receive chemotherapy every day for 1 week followed by 3 weeks with no chemotherapy. These 4 weeks make up one cycle. Cycles vary in length depending on which drugs are used. Often, a cycle is 14, 21, or 28 days long.

Guide 1. Chemotherapy regimens for uterine cancers

Regimens for endometrial cancer	Regimens for uterine sarcoma
Carboplatin/paclitaxel	Doxorubicin
Cisplatin/doxorubicin	Docetaxel/gemcitabine
Cisplatin/doxorubicin/paclitaxel	Doxorubicin/olaratumab
Carboplatin/docetaxel	Doxorubicin/ifosfamide
Carboplatin/paclitaxel/bevacizumab	Doxorubicin/dacarbazine
Ifosfamide/paclitaxel	Gemcitabine/dacarbazine
Cisplatin/ifosfamide	Gemcitabine/vinorelbine
Carboplatin/paclitaxel/trastuzumab	
Everolimus/letrozole	

Figure 12. Chemotherapy treatment room

Chemotherapy is often given in treatment rooms, which allow several people to receive treatment at the same time.

Guide 2. Hormone therapy drugs

Generic name	Brand name	Drug type
Medroxyprogesterone acetate	Provera®	Progesterone hormone
Megestrol acetate	--	Progesterone hormone
Levonorgestrel	Mirena®	Progesterone hormone
Anastrozole	Arimidex®	Aromatase inhibitor
Letrozole	Femara®	Aromatase inhibitor
Exemestane	Aromasin®	Aromatase inhibitor
Tamoxifen	--	Anti-estrogen
Fulvestrant	Faslodex®	Anti-estrogen

Hormone therapy

Hormones (estrogen and/or progesterone) can help some cancers grow. To prevent cancer cells from getting the hormones they need to grow, drugs can be used to reduce the level of hormones in the body. Like chemotherapy, hormone therapy is a systemic treatment. This means that it treats your whole body. The types of hormone therapies used most often for uterine cancer are shown in Guide 2 and described below.

- **Progestins** are man-made versions of the hormone progesterone. Progestins help slow down the growth of endometrial cancer cells.
- **Tamoxifen** is a drug used to reduce the amount of estrogen in the body.
- **Aromatase inhibitors** are drugs that can stop estrogen from being made by fatty tissue in the body. As a result, the overall amount of estrogen in the body is lowered.
- **GNRH** (**g**o**n**adotropin-**r**eleasing **h**ormone) agonists work by lowering estrogen levels in women who still have their ovaries.
- **Fulvestrant**, like tamoxifen, is an anti-estrogen drug. It blocks estrogen receptors that can cause cancer cells to grow.

Targeted therapy

There are very small particles in your body called molecules. Some of the molecules help cancer to grow and spread. Targeted therapies are drugs that target—and stop—these molecules from helping the cancer grow.

Not everyone with uterine cancer will be treated with a targeted therapy. Treatment with a targeted therapy is only given if other treatments have failed.

Bevacizumab

Tumors need new blood vessels to grow. VEGF (**v**ascular **e**ndothelial **g**rowth factor) is a protein that causes new blood vessels to form. Some cancer cells have receptors for VEGF. This means that some cancer cells have a "landing pad" where VEGF can "land" (attach) and create new blood vessels for the tumor to get bigger.

Bevacizumab shuts down the landing pad so that VEGF can't attach and no new blood vessels can be made. It is used alone or with chemotherapy drugs. You may be offered treatment with bevacizumab if:

- You have endometrial cancer; and
- The cancer came back after treatment with chemotherapy.

Trastuzumab

HER2 is a protein found on the surface of cells. Some endometrial cancers have too much HER2 protein, which causes the cancer to grow and spread more quickly than it normally would. Trastuzumab helps kill the cancer cells that have too much HER2. If testing shows that your uterine cancer has too much HER2, your doctor may want to add trastuzumab to your chemotherapy. Generally, this is used in more advanced disease.

SNAPSHOT

Targeted therapy

- ✓ Targeted therapy is used to treat some endometrial cancers that have returned after treatment with chemotherapy.
- ✓ Like chemotherapy, targeted therapies are given by infusion. This means they are injected into a vein and then enter your bloodstream.
- ✓ Bevacizumab (Avastin®) and trastuzumab (Herceptin®) are targeted therapies used for endometrial cancer.

Immunotherapy

The immune system is your body's natural defense against infection and disease. A newer type of cancer treatment called immunotherapy increases the activity of your immune system. By doing so, it improves your body's ability to find and destroy cancer cells.

Pembrolizumab

Your immune system has important white blood cells called T cells. T cells' main job is to attack harmful things in your body, like bacteria, viruses, and cancer. They do this with the help of a protein on their surface called PD-1. Cancer cells have a different protein on their surface called PD-L1. When PD-1 and PD-L1 meet, it is called an immune checkpoint. The T cell is "told" to leave the cancer cell alone instead of attacking it.

A type of drug called an immune checkpoint inhibitor stops these two proteins from meeting. This means that the T cells will do their job and attack the cancer cells. Pembrolizumab is an example of an immune checkpoint inhibitor. Pembrolizumab isn't for everyone. You may be offered treatment with pembrolizumab if:

- You have endometrial cancer
- The cancer came back after treatment with chemotherapy
- Your tumor tested positive for a specific tumor marker (MSI-H/dMMR).

Clinical trials

New tests and treatments aren't offered to the public as soon as they're made. They first need to be studied. A clinical trial is a type of research that studies how safe and helpful tests and treatments are. When found to be safe and helpful, they may become tomorrow's standard of care. Because of clinical trials, the tests and treatments in this book are now widely used to help people with uterine cancer.

Joining a clinical trial can have both upsides and downsides. **See Figure 13** for some things to consider when deciding to join a clinical trial. You will need to weigh the pros and cons and decide what is right for you.

To join a clinical trial, you must meet the conditions of the study. Patients in a clinical trial are often alike in terms of their cancer and general health. This is to know that any progress is because of the treatment and not because of differences between patients.

To join, you'll need to review and sign a paper called an informed consent form. This form describes the study in detail. The study's risks and benefits should be described and may include others than those described above.

Ask your treatment team if there is an open clinical trial that you can join. There may be clinical trials where you're getting treatment or at other treatment centers nearby. You can also find clinical trials through the websites listed in Part 7.

Figure 13. Possible benefits and downsides of joining a clinical trial

Review

- Surgery to remove the uterus, the ovaries, and the fallopian tubes is the best way to treat uterine cancer. The medical names for the surgeries are total hysterectomy and bilateral salpingo-oophorectomy.
- Radiation therapy uses high-energy rays to kill cancer cells or stop new cancer cells from being made. Radiation therapy is a local treatment. This means that it affects only the part of the body where the cancer is.
- Chemotherapy is treatment with drugs to kill cancer cells throughout the body. Most chemotherapy drugs for uterine cancer are liquids that are slowly injected into your bloodstream. Chemotherapy is a systemic treatment. This means that it affects your whole body.
- Treatment with targeted therapy or immunotherapy may be an option for some patients with advanced endometrial cancer, or for those whose cancer has come back after treatment with chemotherapy.
- Clinical trials give people access to new tests and treatments that they wouldn't normally get. These new tests and treatments may, in time, be approved by the FDA.

5

Treatment guide: Endometrial cancer

39	Treatment
47	High-risk endometrial cancer
50	If cancer comes back
53	Review

This chapter describes how the most common type of uterine cancer—endometrial carcinoma—is usually treated. Pre-treatment testing, treatment, and follow-up care are explained.

Treatment

Before starting treatment, it is important to know if the cancer has spread. If the cancer has spread (and how far) play a large part in how it's treated. There are three main possibilities:

- The cancer is only in the main part of your uterus (it hasn't spread).
- The cancer has spread from the main (center) part of your uterus into the lower part, called the cervix.
- The cancer has spread beyond the uterus into other parts of your body.

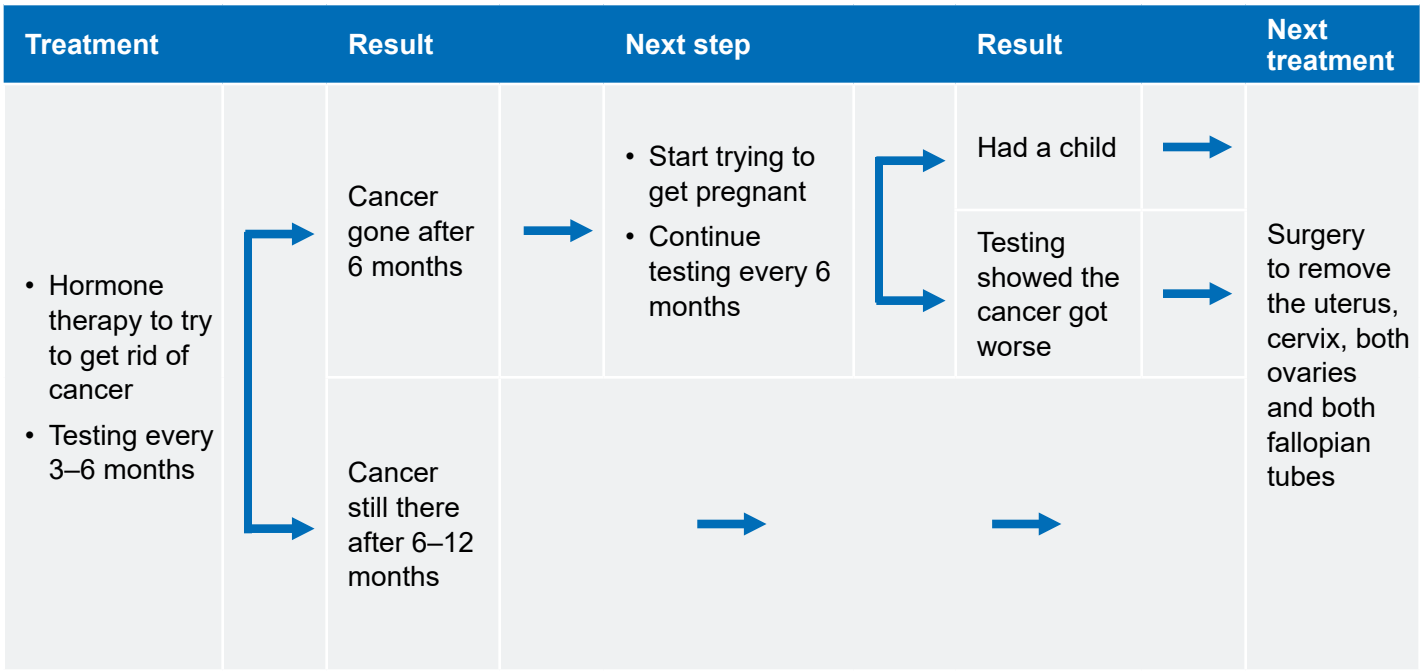
Treatment for each of these scenarios is discussed next.

The cancer is only in the uterus

When most women are diagnosed with endometrial cancer, the cancer hasn't spread from the main part of the uterus. For these women, surgery to remove the uterus, fallopian tubes, and ovaries (total hysterectomy and bilateral salpingo-oophorectomy) is the best treatment. A small number of women may not need to have their ovaries removed. This is called *ovarian preservation*.

Sometimes surgery isn't an option for one or more reasons. In this case, radiation therapy is the next best way to treat the cancer. The radiation therapy may be external, internal, or both. Another option for some women who can't have surgery is hormone therapy. This may be a good option for women with estrogen and progesterone receptor-positive cancer. Women being treated with hormone therapy alone should be tested on a regular basis (every 3 to 6 months) to see if it's working. Endometrial biopsy is used to do the testing.

Guide 3. Fertility-sparing treatment for endometrial cancer



Fertility-sparing therapy

Surgery to remove the uterus, fallopian tubes, and ovaries is the standard treatment for endometrial cancer that hasn't spread beyond the uterus. If a woman has these organs removed, she can no longer have children. For some younger women diagnosed with endometrial cancer, this can be very difficult to accept. There is a treatment option for some low-risk women who want to treat the cancer, but who also want to try to have a child. This type of treatment is called *fertility-sparing therapy*. See Guide 3.

If you meet the criteria for fertility-sparing therapy, you will still need surgery to remove your uterus, fallopian tubes, and ovaries. Before having surgery, however, you will be treated first with hormone therapy to try to remove all of the cancer. To see if the hormone therapy is working, every 3 to 6 months you will have a tissue sample removed from the inner lining of your uterus (endometrium) for testing. This is done using endometrial biopsy or dilation and curettage (a "D&C" for short).

If the hormone therapy works and the cancer is gone after 6 months, you can stop the hormone therapy and begin trying to get pregnant. While you are trying to get pregnant, you will continue to have testing of your endometrium every 6 months. If you are successful at becoming pregnant, after having the baby you would then have surgery to remove the uterus (including the cervix), both ovaries and both fallopian tubes.

If—while you are trying to get pregnant—testing shows that the cancer has come back, your doctor will recommend that you have the surgery.

If the hormone therapy doesn't work and the cancer is still there after 6 to 12 months, your doctor will recommend that you have the surgery.

There are three ways that hormone therapy can be given. All three use artificial (man-made) versions of the hormone progesterone:

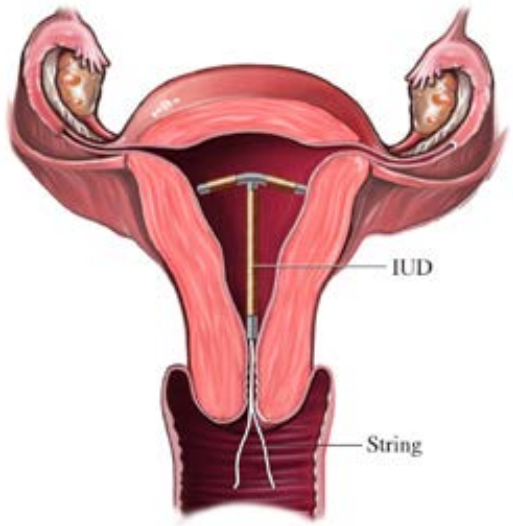
- **You can take a pill every day**. The drug is called megestrol acetate.
- **You can have an injection (shot)**. The shots are given every 12 weeks. The drug being injected is called medroxyprogesterone acetate (Provera®).
- **You can use a hormone-releasing IUD** (**i**ntra**u**terine **d**evice). Mirena® is an example of this type of IUD. **See Figure 14**.

Fertility-sparing therapy is only an option for some women considered to be low-risk. There are some criteria, or rules, that you have to meet to have fertility-sparing therapy:

- The cancer should be the lowest possible stage (stage 1A).
- The cancer cells should be grade 1. This means that they look similar to healthy cells under a microscope.
- Your imaging test results should show that the cancer has not spread, and is only in the endometrium.
- There should be no medical reasons why you can't (or shouldn't) get pregnant.
- There should be no medical reasons why you can't (or shouldn't) have hormone therapy. Contraindications to hormone therapy include stroke, myocardial infarction, pulmonary embolism, deep vein thrombosis, and smoking.
- You should fully understand that fertility-sparing therapy is not the normal treatment for endometrial cancer.

Figure 14. An IUD (intrauterine device)

An IUD is one method of hormone therapy used in fertility-sparing therapy.



Guide 4. Cancer has spread to the cervix

Options if surgery CAN be done as first treatment

First treatment options	Next treatment	What's next?
OPTION 1: Surgery first (recommended) Total or radical hysterectomy and bilateral salpingo-oophorectomy	→	See *Treatment after surgery* section of this chapter
OPTION 2: Radiation first EBRT and internal radiation (brachytherapy) to shrink the tumor before surgery	→ Total hysterectomy and bilateral salpingo-oophorectomy →	Start follow-up care

Options if surgery CAN'T be done as first treatment

First treatment options	Result	Next treatment
OPTION 1: Radiation first (recommended) • EBRT and internal radiation (brachytherapy) to shrink the tumor before surgery • You may also have systemic therapy	Cancer can be removed with surgery →	Surgery
	Cancer still can't be removed with surgery →	Start follow-up care
OPTION 2: Chemotherapy first • Chemotherapy to shrink the tumor before surgery	Cancer can be removed with surgery →	Surgery
	Cancer still can't be removed with surgery →	External beam radiation and internal radiation (brachytherapy)

Cancer may have spread to the cervix

If your doctor thinks that the cancer may have spread from the main part of the uterus to the lower part (the cervix), he or she will want to do tests to know for sure. One way to find out is to have a cervical biopsy. This is much like the biopsy you had to diagnose endometrial cancer. The main difference is that the skin cells are taken from the cervix (the lower part of the uterus) instead of from the inside lining of the uterus (the endometrium). **See Figure 15**. Another test that can help determine if the cancer has spread to the cervix is an MRI. If you didn't already have an

MRI of your pelvis, your doctor may want to do it at this time.

If the tests show that the cancer has spread to the cervix, treatment options depend on whether the cancer can be removed with surgery. Your doctor will consider the size and location of the tumor in order to decide if surgery can be the first treatment. If he or she thinks you can go straight to surgery, that is the best option. In this situation, either a total hysterectomy or a radical hysterectomy is recommended, along with bilateral salpingo-oophorectomy to remove the fallopian tubes and ovaries. See Guide 4.

Another option is to have radiation therapy first to shrink the cancer, and then have surgery after. While having radiation therapy before surgery is an option, NCCN experts recommend going straight to surgery (if possible). This option is also shown in Guide 4.

If surgery first isn't an option

If your doctor thinks that surgery can't be done first based on the size and the location of the cancer, there are other treatment options. You can have radiation therapy first to try to shrink the tumor. Chemotherapy may be given in addition to the radiation. If the radiation (and chemotherapy, if used) is successful, you would then have surgery. This treatment path is preferred by NCCN experts for patients who can't have surgery first.

Another option for patients who can't have surgery first is treatment with chemotherapy alone to try to shrink the cancer. If the chemotherapy is successful at shrinking the cancer, you would then have surgery. If the chemotherapy isn't successful, you would have external beam radiation and internal radiation (brachytherapy). See Guide 4.

Figure 15. Cervical biopsy

If your doctor thinks the cancer may have spread to the cervix, he or she will take a small sample of tissue from the cervix for testing.

Guide 5. Cancer has spread beyond the uterus

Result of imaging	Treatment		What's next?
Cancer hasn't spread farther than the pelvis or abdomen	**Total hysterectomy and bilateral salpingo-oophorectomy** Before surgery, chemotherapy may be used to shrink the tumor.	→	See *Treatment after surgery* section
Cancer has spread to distant areas of the body	**You may have one or more of these treatments:** • Chemotherapy • External radiation • Hormone therapy • Surgery to help with symptoms (not to cure the cancer)	→	Start surveillance and follow-up care
Cancer has spread beyond the uterus and can't be removed with surgery first	**OPTION 1: External radiation, with or without:** • Internal radiation (brachytherapy) • Chemotherapy	→	Surgery, if the treatment(s) worked well enough.
	OPTION 2: Systemic therapy (chemotherapy and/or hormone therapy)	→	Surgery and/or radiation therapy, if chemotherapy worked well enough

Cancer may have spread beyond the uterus

If your doctor suspects that the cancer has spread beyond your uterus, you may have a CA-125 blood test (if you haven't already had one). Also, if you haven't had any imaging tests, he or she may want you to do those now. Treating cancer that has spread beyond the uterus depends on how far the cancer has spread and whether it can be removed with surgery first. Treatment options include surgery, radiation, and chemotherapy. See Guide 5 for three possible scenarios and their treatment.

Treatment after surgery

In Part 4, *Treatments for uterine cancer*, we learned about surgical staging. To recap, the surgeon uses what he or she sees first-hand, along with any tests done before surgery, to determine what stage the cancer is. A big benefit of surgical staging is that it helps your doctors decide if you should have more treatment after surgery. The treatment(s) you may have after surgery are described next, according to the surgical stage.

Stage I and II endometrial cancer

Stage I means that the cancer is only in the main part of the uterus. It hasn't spread to the lower part of the uterus (the cervix), or farther. Stage II means that the cancer has spread from the main part of the uterus into the cervix.

To determine whether you should have more treatment after surgery, your doctor will consider whether you have any factors that could increase the risk of the cancer coming back. These factors include:

- Whether you have stage IA or IB cancer
- If you are age 60 or older
- The type of hysterectomy you had
- The grade of the tumor cells (how much the tumor cells look like normal cells under a microscope)
- Whether there is LVSI (**l**ympho**v**ascular **s**pace **i**nvasion). LVSI means that there are tumor cells in the blood vessels or lymph vessels outside of the main tumor. If there are, it means that the cancer is more likely to have spread to the lymph nodes.

After weighing these factors, your doctor may decide that you don't need any more treatment. This may be the case for stage I cancer. In this case, a watch-and-wait approach is used. You would begin follow-up care and would be monitored for the return of cancer. Women with stage II cancer almost always need treatment after surgery. The treatments used after surgery for stage I and stage II endometrial cancer are shown in Guide 6.

Stage III and IV endometrial cancer

Stage III endometrial cancer means that the cancer has spread to the vagina, ovaries, and/or lymph nodes. Treatment after surgery for women with stage III cancer is the same as women with stage IVA cancer. Stage IVA cancer has spread to the inner layer of the bladder or the intestines. The main options for treating stage III and IVA cancer after surgery are:

- **Systemic therapy**. For most women, this means chemotherapy. For some women (those who can't tolerate chemotherapy, for example), this means hormone therapy. Internal radiation (brachytherapy) may also be used.
- **External beam radiation**. Internal radiation (brachytherapy) may also be used

Stage IVB endometrial cancer has spread to organs located far from the uterus, such as the lungs or bones. The main treatment after surgery for stage IVB endometrial cancer is chemotherapy. In addition to chemotherapy, you may also have radiation therapy (internal, external, or both).

After surgery and any treatment after surgery, follow-up care begins. See *When treatment is over* on page 48 for details on monitoring for the return of cancer.

Guide 6. Stage I and II endometrial cancer: treatment after surgery

Stage	Grade	Treatment options after surgery
IA	• Grade 1 • Grade 2	• Watch-and-wait (no treatment) **(preferred if you have no risk factors)** • If you have 1 risk factor, you may have internal radiation (vaginal brachytherapy) • If you have 2 risk factors, internal radiation (vaginal brachytherapy) is recommended
	Grade 3	• Internal radiation (vaginal brachytherapy) **(preferred)** • If you have no risk factors, watch-and-wait (no treatment) is an option
IB	• Grade 1 • Grade 2	• Internal radiation (vaginal brachytherapy) **(preferred)** • If you have no risk factors, watch-and-wait (no treatment) is an option
	Grade 3	• Radiation (internal and/or external), with or without: ◦ Systemic therapy (chemotherapy or hormone therapy)
II	• Grade 1 • Grade 2	• Internal radiation (alone or combined with external radiation) • External radiation (alone or combined with internal radiation) • No treatment (watch-and wait) may be an option for a select group of patients
	Grade 3	• External beam radiation, with or without: ◦ Internal radiation (vaginal brachytherapy) ◦ Systemic therapy (chemotherapy or hormone therapy)

High-risk endometrial cancer

Most endometrial cancers generally respond well to treatment and often can be cured. Other, much less common types of endometrial cancer can spread quickly and are harder to treat. The medical names for these high-risk endometrial cancers are:

- Serous carcinomas
- Clear cell carcinomas
- Carcinosarcomas

Like endometrioid tumors, the first sign of these high-risk tumors is vaginal bleeding. However, women with one of these kinds of endometrial cancer may also have one or more of the signs and symptoms below:

- Lumps in the pelvis area
- Abnormal Pap smear results
- Fluid buildup or swelling in the abdomen (also known as ascites)

Because these types of endometrial cancer can spread quickly and are harder to treat, fertility-sparing therapy is not recommended for younger women diagnosed with these tumor types.

Testing before treatment

Your doctors will want to know if the cancer has spread beyond your uterus. Your doctor may order one or more of the tests listed below. All of the tests are explained in Part 3, *First steps*.

- CA-125 blood test
- MRI
- CT of your chest, abdomen, and pelvis
- PET

SNAPSHOT

High-risk endometrial cancer

- ✓ These cancers grow quickly and are hard to treat.
- ✓ At the time of diagnosis, cancer may have already spread beyond the uterus.
- ✓ Fertility-sparing therapy is not recommended for younger women with one of these cancer types.
- ✓ The most effective treatment is surgery.

Treatment

The most effective treatment for high-risk endometrial cancers is surgery (total hysterectomy and bilateral salpingo-oophorectomy). These surgeries are described in Part 4, *Treatments for uterine cancer*.

If surgery isn't an option for one or more reasons, there are two main treatment options. The first is external radiation. This may be combined with internal radiation (vaginal brachytherapy), systemic therapy, or both. The second option is systemic therapy. For most women, this means chemotherapy. For some women (those who can't tolerate chemotherapy, for example), this means hormone therapy. The goal of both treatment options is to shrink the tumor enough so that it can be removed

using surgery. After treatment, your doctor will reassess the size of the tumor to see if this possible.

Treatment after surgery

Treatment of high-risk endometrial cancer after surgery depends on the stage. The options for treating stage IA disease include chemotherapy and external beam radiation. Internal radiation (brachytherapy) may be added to either of these treatment options. Some patients with stage IA disease may not need more treatment after surgery. This may be the case if there are no leftover cancer cells in the tissue samples removed during surgery for testing.

For patients with stage IB, II, III, or IV disease, the main treatment after surgery is chemotherapy. Your doctor may also want you to have external and/or internal radiation therapy. See Guide 7.

When treatment is over

When treatment for endometrial cancer is over, the next phase of your cancer journey begins. This is the surveillance, or monitoring, phase. This phase will last the rest of your life. Staying alert for the return of cancer is just as important as treating it. If cancer does come back, catching it early will give you the best chance of beating it.

Your cancer treatment team and your primary care doctor will work together to make sure you get all of the follow-up tests you need. But, you will have one of the biggest responsibilities—paying close attention to your body. Some kinds of cancer can return without giving your body any "hints." If endometrial cancer does come back, it usually affects your body in ways that you can feel or notice (symptoms). Your doctor will teach you about the symptoms that may mean endometrial cancer has returned. They include:

- Bleeding from your vagina
- Blood in your urine or stool
- Loss of hunger
- Weight loss
- Pain in your stomach, midsection, hip, or back
- Cough
- Shortness of breath
- Swelling (in the stomach area or legs)

If you notice any of these symptoms, you should contact a doctor immediately (don't wait until your next scheduled appointment).

Guide 7. High-risk endometrial cancers: treatment after surgery

Surgical stage	Treatment after surgery
IA	**OPTION 1:** Systemic therapy and internal radiation (brachytherapy) **(recommended)** **OPTION 2:** External beam radiation, with or without internal radiation (brachytherapy) **OPTION 3:** Internal radiation (brachytherapy) alone (for some women with noninvasive disease) **OPTION 4:** Watch-and-wait (for a very small number of patients)
• IB • II • III • IV	**Systemic therapy, with or without:** • External beam radiation • Internal radiation (brachytherapy)

In addition to staying alert for the above symptoms, your doctor will teach you about staying as healthy as possible. Staying healthy is especially important for people who have had cancer. Getting (and staying) healthy includes:

- Maintaining a healthy weight by eating right and exercising
- Quitting smoking (if you are a smoker)
- Recognizing and managing any late or long-term effects of treatment

Your doctor will also want you to have physical exams on a regular basis. For most women, imaging tests are done on an as-needed basis. You may need an imaging test if your doctor thinks the cancer may have spread, or if you have symptoms. See Guide 8 for details on monitoring for the return of endometrial cancer.

Sexual health

Vaginal moisturizers

Older age, menopause, and some uterine cancer treatments can cause the vagina to become dry and less stretchy. To offset this side effect, use of vaginal moisturizers is highly encouraged. Like moisturizers for your body, vaginal moisturizers restore moisture to the vagina and help to keep the vaginal tissue healthy. Vaginal moisturizers can be used several times a week, and many come with applicators to make using them easier.

Vaginal stenosis

Radiation therapy (internal and/or external) to the pelvis can cause the vagina to become shorter and tighter (more narrow). This is called vaginal stenosis. Vaginal stenosis can make it uncomfortable or even painful to have sex, or to have vaginal examinations by a doctor. Vaginal dilator therapy can be used to lessen the effects of vaginal stenosis. A vaginal dilator is a device used to gradually stretch or widen the vagina. You can start using a dilator as soon as 2 to 4 weeks after radiation therapy has ended, and can continue to use it for as long as you want. Vaginal dilators are not one-size-fits-all. Different sizes are available, as are dilator kits containing different size devices. The size of the dilator can be increased over time as the vagina lengthens and widens.

Guide 8. Monitoring for the return of endometrial cancer

Follow-up test	Who should have this test?	How often?
Physical exam	All women treated for endometrial cancer	Every 3–6 months for 2 to 3 years, then once or twice a year after that.
CA-125 blood test	Women whose CA-125 level was high at the beginning of treatment	As recommended by your doctor.
Imaging tests (in general)	Women with symptoms, or whose cancer may have spread	As needed or as recommended by your doctor.
CT scan of chest, abdomen, and pelvis (optional)	Women treated for stage III or IV endometrial cancer	Every 6 months for the first 3 years and then every 6–12 months for the next 2 years.

If cancer comes back

If your doctor thinks the cancer may have returned, he or she will likely order imaging tests. The tests may include:

- CT scan of your abdomen, pelvis, and/or chest
- PET/CT of your whole body
- MRI of your pelvis (for women who still have their uterus)

Treating endometrial cancer that has returned depends on:

- **The location of the cancer**. After surgery to remove the uterus, ovaries, and fallopian tubes, endometrial cancer may return to the vagina. Treatment will depend on whether the cancer is only in the vagina, or outside of it as well.
- **Which treatments you've already had**. EBRT shouldn't be used to treat the same area more than once.

The main treatments for cancer that returns to the vagina (or within the pelvis) are:

- Radiation therapy
- Surgery
- Systemic therapy

See Guide 9 for the treatment options, which depend on whether you've had radiation therapy at the cancer site.

If there are only a few areas of new cancer growth outside the pelvis, the treatment options are:

- Surgery to remove the new cancer growths (if the tumors are small enough)

Guide 9. Cancer has returned to the vagina or the pelvis

Prior radiation	Treatment options
You've never had any radiation at the cancer site	**OPTION 1:** External beam radiation, with or without Internal radiation (brachytherapy) **OPTION 2:** Surgery to see if the cancer has spread beyond the vagina, and to remove the new cancer growth. You may have intra-operative radiation therapy during surgery.
You've had external beam radiation at the cancer site	**OPTION 1:** Surgery to see if the cancer has spread beyond the vagina, and to remove the new cancer growth. You may have intra-operative radiation therapy during surgery. **OPTION 2:** Systemic therapy, with or without palliative radiation therapy.
You've had internal radiation only at the cancer site	Surgery to see if the cancer has spread beyond the vagina, and to remove the new cancer growth. You may have intra-operative radiation therapy during surgery.

- EBRT
- Ablative therapy

Systemic therapy is also an option, but is less preferred than the local treatments listed above. If local treatment doesn't work, or if the cancer continues to return, further treatment will depend on the features of the cancer and whether you have symptoms.

Treating cancer that has returned and has spread (metastasized) to areas far from the uterus depends on a few things:

- The grade of the tumor cells
- Whether you have any symptoms
- Whether the cancer is estrogen or progesterone receptor positive
- The size of the tumors

The main treatments for endometrial cancer that has returned and spread far from the pelvis (metastasized) are hormone therapy and systemic therapy. See Guide 10. Hormonal agents for treating metastatic disease are listed below. No particular drug, dose, or schedule has been found to work best.

- Megestrol alternated with tamoxifen
- Progestational agents alone
- Aromatase inhibitors
- Tamoxifen alone
- Fulvestrant

Guide 10. Cancer has returned and has spread far from pelvis

Description	Treatment	What's next?
You don't have symptoms **or** Cancer cells are Grade 1 **or** Cancer is estrogen or progesterone receptor positive	**Hormone therapy** If cancer continues to get worse, then chemotherapy.	If cancer gets worse, start supportive care or clinical trial.
You have symptoms **or** Cancer cells are Grade 2 or 3 **or** The tumors are large	**Systemic therapy** You may also have external radiation to help with symptoms.	If cancer gets worse, start supportive care or clinical trial.

Supportive care

Because the cancer can't be cured, the goal of supportive care is to make you more comfortable and to help keep the cancer under control. Supportive care may also help you live longer and feel better overall. When used for advanced cancers, supportive care is often called palliative care.

Clinical trials

A clinical trial is a type of research study that involves people. NCCN believes that the best management for any patient with cancer is in a clinical trial. Ask your treatment team if there is an open clinical trial that you can join. Clinical trials are discussed in more detail at the end of Part 4, *Treatments for uterine cancer*. You can use the websites in Part 7, *Making treatment decisions*, to find clinical trials near you.

Review

- The best treatment for endometrial cancer that hasn't spread from the uterus is surgery. If surgery isn't possible, radiation therapy is the next best treatment.
- Fertility-sparing therapy is an option for some younger, very low-risk women who want to try to have a child. It involves delaying surgery and having treatment with hormone therapy first.
- If endometrial cancer has spread to the cervix, treatment options depend on whether the cancer can be removed with surgery. If it can, surgery first is the best option. Otherwise, shrinking the tumor with radiation first and then having surgery is the next best option.
- If endometrial cancer has spread beyond the uterus (and cervix), treatment depends on how far the cancer has spread and whether it can be removed with surgery first.
- Most women with endometrial cancer will need to have more treatment after surgery to get rid of any remaining cancer. Some women with stage I or II endometrial cancer may not need more treatment.
- High-risk endometrial cancers are treated differently than the most common type of endometrial cancer. These high-risk types are: serous carcinomas, clear cell carcinomas, and carcinosarcomas.
- The most effective treatment for high-risk endometrial cancers is surgery. Most women will also need treatment after surgery.
- When treatment is over, follow-up care begins. This involves having regular physical exams and staying alert for signs that the cancer has returned.
- If endometrial cancer returns, treatment depends on where the cancer returned to, and which treatments you've already had.

6

Treatment guide: Uterine sarcoma

55 First steps
55 Treatment
59 When treatment is over
61 If cancer comes back
62 Review

This chapter describes how a rare type of uterine cancer—uterine sarcoma—is usually treated. Pre-treatment testing, treatment, and follow-up care are explained.

First steps

Uterine sarcoma starts in the supporting tissues or muscles of the uterus. This type of uterine cancer usually spreads more quickly and is harder to treat than endometrial cancer. Uterine sarcomas differ from endometrial cancer in that they are often found after a hysterectomy.

Like endometrial cancer, there are also different types of uterine sarcomas. Before finding out that you have uterine cancer, you had a small sample of tissue removed for testing (a biopsy). That tissue sample was then analyzed by an expert in studying cells and tissues under a microscope, called a pathologist. The pathologist then determined the specific type of cancer. The following types of uterine sarcomas are discussed in this book:

- uLMS (**u**terine **l**eio**m**yo**s**arcoma)
- ESS (**e**ndometrial **s**tromal **s**arcoma)
- UUS (**u**ndifferentiated **u**terine **s**arcoma)

Before beginning treatment, you will need to do some imaging tests. You will likely have a CT scan (or combination CT/MRI scan) of your chest, abdomen, and pelvis. In order to find out if the cancer is only in the uterus, you may also have an MRI of your pelvis. Whether you need other imaging tests will depend on your symptoms and whether your doctor thinks the cancer has spread (metastasized).

Another test you may have is estrogen and progesterone receptor testing. This test is described in Part 3, *First steps*. The ovaries produce the hormones estrogen and progesterone. If the sarcoma is hormone receptor positive, it means that hormones may help the cancer to grow. So, the purpose of hormone receptor testing is to help decide whether the ovaries should be removed. This decision will be made on a case-by-case basis for women young enough to have children. Hormone receptor testing is done either after a biopsy or after surgery.

Treatment

Treatment of these rare cancers depends on how the uterine sarcoma was discovered. They are often found after a hysterectomy. Sometimes uterine sarcomas are diagnosed by testing a sample of tissue (a biopsy), but biopsy doesn't work as well for uterine sarcomas as it does for endometrial cancers. A third way that a uterine sarcoma can be found is during surgery to remove fibroids. Fibroids are non-cancerous tumors that can grow in the uterus and cause symptoms.

In women who have a uterus, hysterectomy (and possibly bilateral salpingo-oophorectomy) is the most effective way to treat uterine sarcomas. If the cancer can't be removed with surgery, treatment options include radiation and systemic therapy. See Guide 11 for the treatment options if the sarcoma was found by biopsy or during fibroid removal. The location of the tumor and whether it can be removed with surgery play the biggest part in determining which treatments can be used.

If the cancer was found after a total or a partial hysterectomy, treatment will depend on the results of the original hysterectomy and whether or not the ovaries and fallopian tubes were removed. If only one ovary and one fallopian tube were removed, the

Guide 11. The cancer was found by biopsy or fibroid removal

Where is the cancer?	Treatment	Type of sarcoma	Next treatment
The cancer is only in the uterus	**Total hysterectomy, with or without removal of both ovaries and fallopian tubes** During surgery, your doctor may also want to "explore" see if there is any cancer beyond the uterus	Low-grade ESS	see Guide 13
		• High-grade ESS • UUS • uLMS	see Guide 14
The cancer has probably (or definitely) spread beyond the uterus	**OPTION 1: Surgery** Total hysterectomy and removal of cancer that has spread beyond the uterus, with or without removal of both ovaries and both fallopian tubes **OPTION 2: No surgery** Your doctor will consider your symptoms, how much cancer there is, and how well it can be removed with surgery	Low-grade ESS	see Guide 13
		• High-grade ESS • UUS • uLMS	see Guide 14
The cancer can't be removed with surgery	**OPTION 1: Radiation** External beam radiation therapy, with or without internal radiation (brachytherapy) **OPTION 2: Systemic therapy** May be given in addition to radiation	→	Start follow-up care (see Guide 15)

other ovary and fallopian tube may be removed to treat the cancer. This is called a unilateral salpingo-oophorectomy. This may be the best choice for women with estrogen receptor-positive cancer and women with low-grade ESS. See Guide 12 for the treatment options if the cancer was found after a hysterectomy.

Guide 12. The cancer was found after hysterectomy

First treatment		Type of sarcoma	Next treatment
During your hysterectomy, the tumor wasn't removed in one piece or your cervix wasn't completely removed	**You may have another surgery to remove the cancer and/or the remaining cervix**	Low-grade ESS	see Guide 13
		• High-grade ESS • UUS • uLMS	see Guide 14
You had a hysterectomy and one or both of your ovaries or fallopian tubes wasn't completely removed.	**You may have surgery to remove the remaining fallopian tube(s) and ovar(ies), especially if you have low-grade ESS or an estrogen receptor positive tumor**	Low-grade ESS	see Guide 13
		• High-grade ESS • UUS • uLMS	see Guide 14

Treatment after surgery

Low-grade ESS

Low-grade ESS is treated differently than high-grade ESS. Treatment of low-grade ESS is described below and shown in Guide 13. For stage I low-grade ESS, having no further treatment is an option if there is no sign of cancer after surgery. This may be the best option for post-menopausal women or women who already had a bilateral salpingo-oophorectomy. Hormone therapy is also a treatment option after surgery.

The recommended treatment after surgery for women with stage II through IV low-grade ESS is hormone therapy. EBRT may be used in addition to hormone therapy for stages II through IVA. Radiation may also be added to hormone therapy for women with stage IVB ESS. However, radiation therapy at this stage is called palliative. The goal isn't to cure the cancer, but rather to control symptoms or to prevent symptoms from occurring in the first place.

Options for hormone therapy include:

- Aromatase inhibitors (recommended)
- Fulvestrant
- Megestrol acetate
- Medroxyprogesterone acetate
- Gonadotropin-releasing hormone [GnRH] analogs

High-Grade ESS, uLMS, and UUS

Options for treating stage I uLMS, UUS, and high-grade ESS after surgery are shown in Guide 14. They include:

- Watch-and-wait (no treatment)
- Systemic therapy

Guide 13. Low-grade ESS: treatment after surgery

Stage	Treatment after surgery
Stage 1	**OPTION 1:** Surgery to remove the ovaries and fallopian tubes **(preferred)** **OPTION 2:** Watch-and-wait (no treatment)
• **Stage 2** • **Stage 3** • **Stage 4A**	Hormone therapy, with or without external beam radiation
Stage 4B	Hormone therapy, with or without radiation to help with symptoms

Guide 14. UUS, uLMS, and high-grade ESS: treatment after surgery

Stage	Treatment options after surgery
Stage 1	• Watch-and-wait (no treatment) • Systemic therapy
• **Stage 2** • **Stage 3** • **Stage 4A**	• Systemic therapy • External beam radiation therapy • Both of the above treatments
Stage 4B	• Systemic therapy (radiation therapy to help with symptoms may be added)

- Estrogen blockade if the tumor is estrogen receptor positive.

Options for treating stage II, III, and IVA uLMS, UUS, and high-grade ESS include:

- Systemic therapy
- EBRT

The main treatment after surgery for uLMS, UUS, and high-grade ESS that has metastasized (stage IVB) is systemic therapy. Palliative radiation therapy may be used to control symptoms or to prevent symptoms from occurring in the first place.

When treatment is over

When treatment is over, the next phase of your cancer journey begins. This is the surveillance, or monitoring, phase. This phase will last the rest of your life. Staying alert for the return of cancer is just as important as treating it. If cancer does come back, catching it early will give you the best chance of beating it.

Your cancer treatment team and your primary care doctor will work together to make sure you get all of the follow-up tests you need. But, you will have one of the biggest responsibilities—paying close attention to your body. Some kinds of cancer can return without giving your body any "hints." If uterine sarcoma does come back, it usually affects your body in ways that you can feel or notice (symptoms). Your doctor will teach you about the symptoms that may mean uterine sarcoma has returned. They include:

- Bleeding from your vagina
- Blood in your urine or stool
- Loss of hunger
- Weight loss
- Pain in your stomach, midsection, hip, or back
- Cough
- Shortness of breath
- Swelling (in the stomach area or legs)

If you notice any of these symptoms, you should contact a doctor immediately (don't wait until your next scheduled appointment).

In addition to staying alert for the above symptoms, your doctor will teach you about staying as healthy as possible. Staying healthy is especially important for people who have had cancer. Getting (and staying) healthy includes:

- Maintaining a healthy weight by eating right and exercising
- Quitting smoking (if you are a smoker)
- Recognizing and managing any late or long-term effects of treatment

Your doctor will also want you to have physical exams and CT scans on a regular basis for a number of years after treatment ends. Other imaging tests will be done if your doctor thinks the cancer may have spread, or if you have symptoms. See Guide 15 for details of the tests used to monitor for the return of uterine sarcomas.

Sexual health

Vaginal moisturizers

Older age, menopause, and some uterine cancer treatments can cause the vagina to become dry and less stretchy. To offset this side effect, use of vaginal moisturizers and lubricants is highly encouraged. Like moisturizers for your body, vaginal moisturizers increase the moisture level in your vagina and help to keep the vaginal tissue healthy. Vaginal moisturizers can be used several times a week, and many come with applicators to make using them easier.

Vaginal stenosis

Radiation therapy (internal and/or external) to the pelvis can cause the vagina to become shorter and tighter (more narrow). This is called vaginal stenosis. Vaginal stenosis can make it uncomfortable or even painful to have sex, or to have vaginal examinations by a doctor. Vaginal dilator therapy can be used to lessen the effects of vaginal stenosis. A vaginal dilator is a device used to gradually stretch or widen

Guide 15. Monitoring for the return of uterine sarcoma

Follow-up test	Who should have this test?	How often?
Physical exam	All women treated for a uterine sarcoma	**First 2–3 years:** every 3–4 months **After that:** once or twice a year
CT scan of chest, abdomen, and pelvis	All women treated for a uterine sarcoma	**First 3 years:** every 3–6 months **Years 4 and 5:** every 6–12 months **Years 6–10:** Once a year or every other year* *Your doctor will decide whether testing should continue during years 6–10 based on the features of your cancer (tumor type, stage, grade)
OPTIONAL: • MRI of abdomen/ pelvis • Chest CT without contrast	All women treated for a uterine sarcoma	**First 3 years:** every 3–6 months **Years 4 and 5:** every 6–12 months **Years 6–10:** Once a year or every other year* *Your doctor will decide whether testing should continue during years 6–10 based on the features of your cancer (tumor type, stage, grade)
Other imaging tests	Women with symptoms or whose cancer may have spread.	As needed or as recommended by your doctor.

the vagina. You can start using a dilator as soon as 2 to 4 weeks after radiation therapy has ended, and can continue to use it for as long as you want. Vaginal dilators are not one-size-fits-all. Different sizes are available, as are dilator kits containing different size devices. The size of the dilator can be increased over time as the vagina lengthens and widens.

If cancer comes back

If your doctor thinks the cancer may have returned, he or she will likely order imaging tests. The testing may include:

- CT scan of your abdomen, pelvis, and/or chest
- PET/CT of your whole body
- MRI of your pelvis (for women who still have their uterus)

Treating uterine sarcoma that has returned depends on:

- **The location of the cancer**. After surgery to remove the uterus, ovaries, and fallopian tubes, cancer may return to the vagina. Treatment will depend on whether the cancer is only in the vagina, or outside of it as well.
- **Which treatments you've already had**, specifically whether you've had external radiation. EBRT shouldn't be used to treat the same area more than once, so this is important when deciding how to treat cancer that returns.

The cancer returned to the vagina (or pelvis)

If imaging tests show that the cancer hasn't spread and is only in the vagina or pelvis, treatment options depend on whether you've already had radiation therapy. If you haven't had radiation therapy before, the treatment options are surgery and EBRT.

If surgery is used, you may have external beam radiation and/or systemic therapy before the surgery to try to shrink the tumor. Then, during the surgery, you may have radiation aimed directly at the area where the tumor was removed, in order to kill any remaining cells. This is called intraoperative radiation therapy.

If EBRT is used instead of surgery, internal radiation (brachytherapy) and/or systemic therapy may also be used.

The cancer returned and spread to only a few areas

If the cancer returns and has spread to a few areas (but not throughout the body), treatment depends on whether your doctor thinks the new cancer growths can be removed with surgery. If he or she thinks surgery is possible, surgery should be considered, along with ablative therapy. Ablation destroys cancer cells using heat, cold, or light-activated drugs. If surgery is used, systemic therapy and/or EBRT may be used after surgery to kill any remaining cancer cells.

The cancer returned and spread a lot

If the cancer returns and has spread throughout the body (metastasized), systemic therapy is a treatment option. EBRT may be used in addition to systemic therapy. Because the cancer can't be cured at this stage, the goal of adding radiation therapy is to shrink the tumor(s) in order to help with the symptoms or prevent symptoms from occurring. This is called palliative radiation therapy. An alternative to having any treatment at this stage is to begin supportive (also called palliative) care.

Supportive care

Because the cancer can't be cured, the goal of supportive care is to make you more comfortable and to help keep the cancer under control. Supportive care may also help you live longer, improve your eating, and help you feel better overall. When used for advanced cancers, supportive care is often called palliative care.

Clinical trials

A clinical trial is a type of research study that involves people. NCCN believes that the best management for any patient with cancer is in a clinical trial. Ask your treatment team if there is an open clinical trial that you can join. Clinical trials are discussed in more detail at the end of Part 4. You can use the websites in Part 7 to find clinical trials near you.

Review

- Uterine sarcoma starts in the supporting tissues or muscles of the uterus.
- Uterine sarcomas are rare, can spread quickly, and are harder to treat than endometrial cancers.
- The three kinds of uterine sarcomas covered in this book are called: uLMS (**u**terine **l**eio**m**yo**s**arcoma), ESS (**e**ndometrial **s**tromal **s**arcoma), and UUS (**u**ndifferentiated **u**terine **s**arcoma). uLMS is the most common.
- Hormone receptor testing is done to help decide whether the ovaries should be removed in younger women with uterine sarcoma.
- Treatment of these rare cancers depends on how the uterine sarcoma was discovered (after a hysterectomy, by biopsy, or after surgery to remove fibroids).
- For women who have their uterus, total hysterectomy and bilateral salpingo-oophorectomy is the most effective treatment.
- When treatment is over, follow-up care begins. This involves having regular physical exams, CT scans, and staying alert for signs that the cancer has returned. Your doctor may also want you to have additional imaging tests.

7
Making treatment decisions

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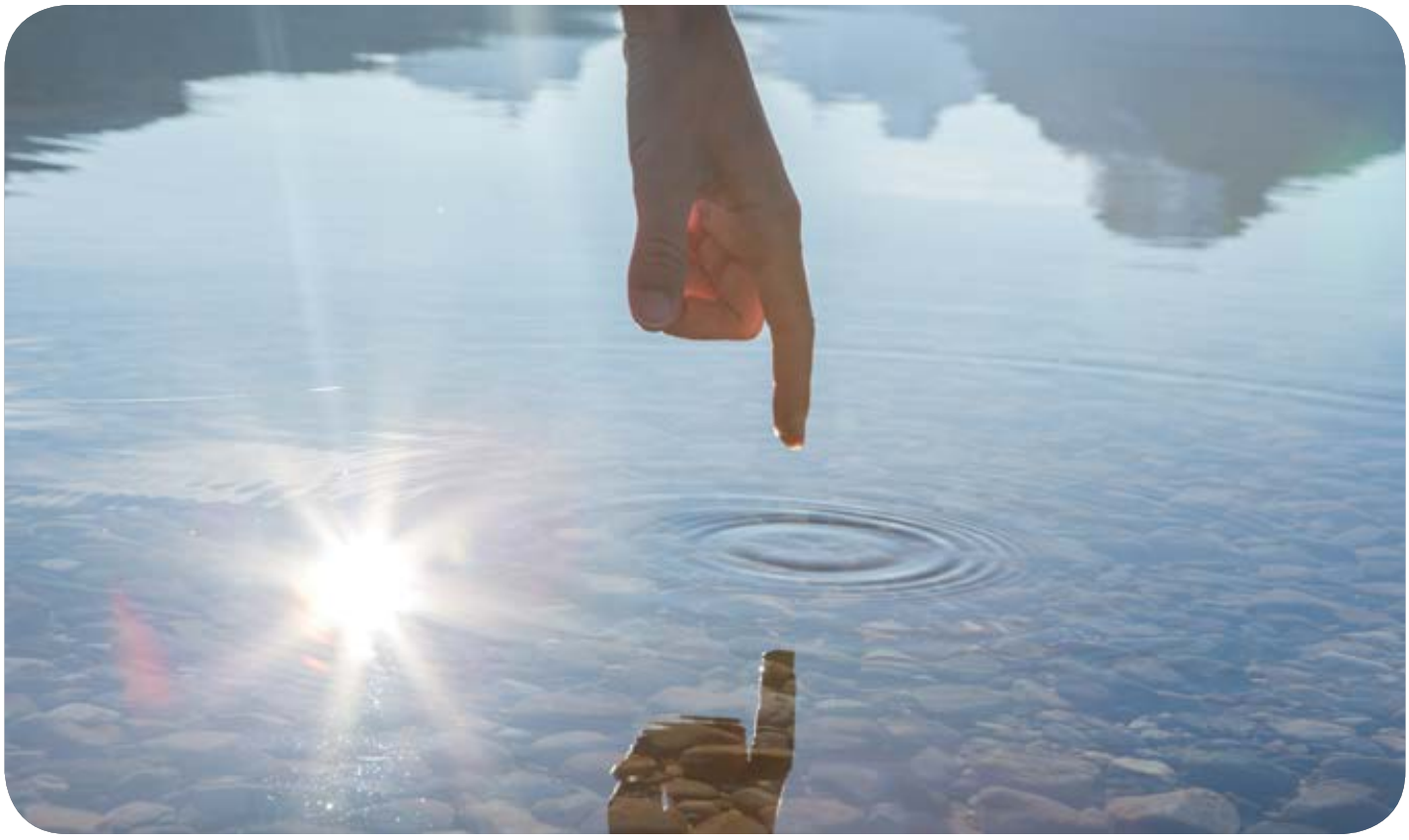

Having cancer is very stressful. There is a lot to learn in what feels like a short amount of time. This chapter can help you make decisions that are in line with your beliefs, wishes, and values.

It's your choice

The role patients want in choosing their treatment differs. You may feel uneasy about making treatment decisions. This may be due to a high level of stress. It may be hard to hear or know what others are saying. Stress, pain, and drugs can limit your ability to make good decisions. You may feel uneasy because you don't know much about cancer. You've never heard the words used to describe cancer, tests, or treatments. Likewise, you may think that your judgment isn't any better than your doctors'.

Letting others decide which option is best may make you feel more at ease. But, whom do you want to make the decisions? You may rely on your doctors alone to make the right decisions. However, your doctors may not tell you which to choose if you have more than one good option. You can also have loved ones help. They can gather information, speak on your behalf, and share in decision-making with your doctors. Even if others decide which treatment you will receive, you still have to agree by signing a consent form.

On the other hand, you may want to take the lead or share in decision-making. Most patients do. In shared decision-making, you and your doctors share information, weigh the options, and agree on a treatment plan. Your doctors know the science behind your plan but you know your concerns and goals. By working together, you are likely to get a higher quality of care and be more satisfied. You'll likely get the treatment you want, at the place you want, and by the doctors you want.

Questions to ask

You may meet with experts from different fields of medicine. Try to talk with each expert. Prepare questions before your visit and ask questions if the person isn't clear. You can also record your talks and get copies of your medical records. It may be helpful to have your spouse, partner, or a friend with you at these visits. They can help to ask questions and remember what was said. Below are some suggested questions to ask.

What's my diagnosis and prognosis?

It's important to know that there are different types of cancer. Cancer can greatly differ even when people have a tumor in the same organ. Based on your test results, your doctors can tell you which type of cancer you have. He or she can also give a prognosis. A prognosis is a prediction of the pattern and outcome of a disease. Knowing the prognosis may affect what you decide about treatment.

1. Where did the cancer start? In what type of cell?
2. Is this cancer common?
3. What is the cancer stage? Does this stage mean the cancer has spread far?
4. Is this a fast- or slow-growing uterine cancer?
5. What other test results are important to know?
6. How often are these tests wrong?
7. Would you give me a copy of the pathology report and other test results?
8. How likely is it that I'll be cancer-free after treatment?

What are my options?

There is no single treatment practice that is best for all patients. There is often more than one treatment option along with clinical trial options. Your doctor will review your test results and recommend treatment options.

1. What will happen if I do nothing?
2. Can I just carefully monitor the cancer?
3. Do you consult NCCN recommendations when considering options?
4. Are you suggesting options other than what NCCN recommends? If yes, why? What are these other options based on?
5. Do your suggested options include clinical trials? Please explain why.
6. How do my age, health, and other factors affect my options?
7. What if I am pregnant?
8. Which option is proven to work best?
9. Which options lack scientific proof?
10. What are the benefits of each option? Does any option offer a cure? Are my chances any better for one option than another? Less time-consuming? Less expensive?
11. What are the risks of each option? What are possible complications?
12. What are the rare and common side effects? Short-lived and long-lasting side effects? Serious or mild side effects? Other risks? What can be done to prevent or relieve the side effects of treatment?
13. What are my chances that the cancer will return?

Weighing your options

Deciding which option is best can be hard. Doctors from different fields of medicine may have different opinions on which option is best for you. This can be very confusing. Your spouse or partner may disagree with which option you want. This can be stressful. In some cases, one option hasn't been shown to work better than another, so science isn't helpful. Some ways to decide on treatment are discussed next.

2nd opinion

After finding out you have cancer, it is normal to want to start treatment as soon as possible. While cancer can't be ignored, there is time to have another doctor review your test results and suggest a treatment plan. This is called getting a 2nd opinion, and it's a normal part of cancer care.

Getting a 2nd opinion doesn't mean you don't trust the first doctor. In fact, most doctors that are diagnosed with cancer will see more than one doctor before beginning treatment. What's more, some health plans require a second opinion. If your health plan doesn't cover the cost of a second opinion, you have the choice of paying for it yourself.

If the two opinions are the same, you may feel better about the treatment you accept to have. If the two opinions differ, think about getting a third opinion. Choosing your cancer treatment is a very important decision. It can affect your length and quality of life.

Support groups

Besides talking to health experts, it may help to talk to patients who have walked in your shoes. Support groups often consist of people at different stages of treatment. Some may be in the process of deciding while others may be finished with treatment. At support groups, you can ask questions and hear about the experiences of other people with uterine cancer.

Compare benefits and downsides

Every option has benefits and downsides. Consider these when deciding which option is best for you. Talking to others can help identify benefits and downsides you haven't thought of. Scoring each factor from 0 to 10 can also help since some factors may be more important to you than others.

Websites

American Cancer Society
www.cancer.org/cancer/endometrial-cancer.html

www.cancer.org/cancer/uterine-sarcoma.html

Centers for Disease Control and Prevention
www.cdc.gov/cancer/uterine

FORCE: Facing Our Risk of Cancer Empowered
www.facingourrisk.org

National Coalition for Cancer Survivorship
www.canceradvocacy.org/toolbox

National Cancer Institute
www.cancer.gov/types/uterine

NCCN
www.nccn.org/patients

U.S. National Library of Medicine Clinical Trials Database
www.clinicaltrials.gov

Review

- Shared decision-making is a process in which you and your doctors plan treatment together.
- Asking your doctors questions is vital to getting the information you need to make informed decisions.
- Getting a second opinion, attending support groups, and comparing pros and cons may help you decide which treatment is best for you.

Glossary

70 Dictionary
72 Acronyms

Dictionary

abdomen
The belly area between the chest and pelvis.

adenocarcinoma
Cancer of cells that line organs and make fluids.

biopsy
Removal of small amounts of tissue or fluid to be tested for disease.

bilateral salpingo-oophorectomy
Surgery to remove both ovaries and both fallopian tubes.

brachytherapy
A treatment with radiation from an object placed near or in the tumor. Also called internal radiation.

cancer grade
A rating of how much cancer cells look like normal cells.

cancer stage
A rating of the outlook of a cancer based on its growth and spread.

cervix
The lower part of the womb that connects to the birth canal.

chemotherapy
Cancer drugs that stop the cell life cycle so cells don't increase in number.

clinical stage
The rating of the extent of cancer before treatment is started.

clinical trial
A type of research involving people that assesses health tests or treatments.

complete blood count (CBC)
A lab test that includes the number of blood cells.

computed tomography (CT)
A test that uses x-rays from many angles to make a picture of the insides of the body.

contrast
A dye put into your body to make clearer pictures during imaging tests.

debulking
An operation that removes as much cancer as possible.

deoxyribonucleic acid (DNA)
A chain of chemicals inside cells that contains coded instructions for making and controlling cells.

endometrium
The layer of tissue that lines the uterus.

epithelium
Tissue that lines the inner wall of the digestive tract.

external beam radiation therapy (EBRT)
A cancer treatment with radiation received from a machine outside the body.

fallopian tube
One of two structures in women that transport an egg from the ovary to the uterus.

fine-needle aspiration (FNA)
A procedure that removes tissue samples with a very thin needle.

follow-up care
Health care that starts once treatment has ended and there are no signs of cancer.

gene
Coded instructions in cells for making new cells and controlling how cells behave.

genetic counselor
An expert in diseases that are passed down in families.

human epidermal growth factor receptor 2 (HER2)
A protein on the edge of a cell that send signals to the cell to grow.

lymph
A clear fluid containing white blood cells.

lymph node
A small, bean-shaped disease-fighting structure.

medical history
A report of all your health events and medications.

medical oncologist
A doctor who's an expert in cancer drugs.

metastasis
The spread of cancer from the first tumor to a new site.

myometrium
The muscular outer layer of the uterus.

nodule
A small mass of tissue.

nutritionist
A health care worker who completed education in food and diet.

observation
A period of testing for changes in cancer status while not receiving treatment.

oncology surgeon
A doctor who's an expert in operations that remove cancer.

ovary
One of a pair of organs in women that produce eggs and hormones.

partial hysterectomy
Surgery to remove the uterus (not including the cervix).

pathologic stage
A rating of the extent of cancer based on tests given after treatment.

pathologist
A doctor who's an expert in testing cells and tissue to find disease.

pelvis
The area of the body between the hip bones.

perimetrium
The thin, outer lining of the uterus.

physical exam
A study of the body by a health expert for signs of disease.

positron emission tomography (PET)
A test that uses radioactive material to see the shape and function of body parts.

positron emission tomography-computed tomography (PET/CT)
A test that uses two picture-making methods to show the shape and function of tissue.

primary tumor
The first mass of cancer cells.

radiation oncologist
A doctor who's an expert in treating cancer with radiation.

radiation therapy
A treatment that uses high-energy rays.

radical hysterectomy
Surgery to remove the uterus, the cervix, and part of the vagina.

radiologist
A doctor who's an expert in reading imaging tests.

recurrence
The return of cancer after a cancer-free period.

serosa
The outer wall layer, in some places, of the digestive tract.

side effect
An unhealthy or unpleasant physical or emotional response to treatment.

simulation
The steps needed to prepare for treatment with radiation.

supportive care
Health care that includes symptom relief but not cancer treatment. Also called palliative care.

surface receptor
A protein within the cell membrane to which substances can attach.

targeted therapy
A drug treatment that impedes the growth process specific to cancer cells.

total hysterectomy
Surgery to remove the uterus (including the cervix).

unilateral salpingo-oophorectomy
Surgery to remove one ovary and one fallopian tube.

uterus
The female organ in which babies grow until birth. Also called womb.

vagina
The hollow structure in women through which babies are born.

Acronyms

3-D
three-dimensional

AJCC
American Joint Committee on Cancer

CA-125
cancer antigen 125

CBC
complete blood count

CT
computed tomography

dMMR
mismatch repair deficient

DNA
deoxyribonucleic acid

EBRT
external beam radiation therapy

ESS
endometrial stromal sarcoma

FDA
U.S. Food and Drug Administration

FIGO
International Federation of Gynecology and Obstetrics

GnRH
gonadotropin-releasing hormone

IUD
intrauterine device

LVSI
lymphovascular space invasion

MMR
mismatch repair

MMMT
malignant mixed Müllerian tumor

MRI
magnetic resonance imaging

MSI
microsatellite instability

MSI
microsatellite instability-high

PD-1
programmed cell death-1

PD-L1
programmed death-ligand 1

PET
positron emission tomography

PET/CT
positron emission tomography/computed tomography

SERM
selective estrogen receptor modulator

SERD
Selective estrogen receptor degrader

TNM
tumor, node, metastasis

uLMS
uterine leiomyosarcoma

UUS
undifferentiated uterine sarcoma

VEGF
vascular endothelial growth factor

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nebraskamed.com/cancer

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Cleveland, Ohio
800.641.2422 • UH Seidman Cancer Center
uhhospitals.org/seidman
866.223.8100 • CC Taussig Cancer Institute
my.clevelandclinic.org/services/cancer
216.844.8797 • Case CCC
case.edu/cancer

City of Hope National Medical Center
Los Angeles, California
800.826.4673
cityofhope.org

Dana-Farber/Brigham and Women's Cancer Center
Massachusetts General Hospital Cancer Center
Boston, Massachusetts
877.332.4294
dfbwcc.org
massgeneral.org/cancer

Duke Cancer Institute
Durham, North Carolina
888.275.3853
dukecancerinstitute.org

Fox Chase Cancer Center
Philadelphia, Pennsylvania
888.369.2427
foxchase.org

Huntsman Cancer Institute at the University of Utah
Salt Lake City, Utah
877.585.0303
huntsmancancer.org

Fred Hutchinson Cancer Research Center/Seattle Cancer Care Alliance
Seattle, Washington
206.288.7222 • seattlecca.org
206.667.5000 • fredhutch.org

The Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins
Baltimore, Maryland
410.955.8964
hopkinskimmelcancercenter.org

Robert H. Lurie Comprehensive Cancer Center of Northwestern University
Chicago, Illinois
866.587.4322
cancer.northwestern.edu

Mayo Clinic Cancer Center
Phoenix/Scottsdale, Arizona
Jacksonville, Florida
Rochester, Minnesota
800.446.2279 • Arizona
904.953.0853 • Florida
507.538.3270 • Minnesota
www.mayoclinic.org/cancercenter

Memorial Sloan Kettering Cancer Center
New York, New York
800.525.2225
mskcc.org

Moffitt Cancer Center
Tampa, Florida
800.456.3434
moffitt.org

The Ohio State University Comprehensive Cancer Center - James Cancer Hospital and Solove Research Institute
Columbus, Ohio
800.293.5066
cancer.osu.edu

Roswell Park Comprehensive Cancer Center
Buffalo, New York
877.275.7724
roswellpark.org

Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine
St. Louis, Missouri
800.600.3606
siteman.wustl.edu

St. Jude Children's Research Hospital
The University of Tennessee Health Science Center
Memphis, Tennessee
888.226.4343 • stjude.org
901.683.0055 • westclinic.com

Stanford Cancer Institute
Stanford, California
877.668.7535
cancer.stanford.edu

University of Alabama at Birmingham Comprehensive Cancer Center
Birmingham, Alabama
800.822.0933
www3.ccc.uab.edu

UC San Diego Moores Cancer Center
La Jolla, California
858.657.7000
cancer.ucsd.edu

UCSF Helen Diller Family Comprehensive Cancer Center
San Francisco, California
800.689.8273
cancer.ucsf.edu

University of Colorado Cancer Center
Aurora, Colorado
720.848.0300
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University of Michigan Rogel Cancer Center
Ann Arbor, Michigan
800.865.1125
mcancer.org

The University of Texas MD Anderson Cancer Center
Houston, Texas
800.392.1611
mdanderson.org

University of Wisconsin Carbone Cancer Center
Madison, Wisconsin
608.265.1700
uwhealth.org/cancer

Vanderbilt-Ingram Cancer Center
Nashville, Tennessee
800.811.8480
vicc.org

Yale Cancer Center/ Smilow Cancer Hospital
New Haven, Connecticut
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