National Cancer Institute

What You Need To Know About™

Cervical Cancer

U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES
National Institutes of Health

National Cancer Institute Services

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

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

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

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Contents

About This Booklet

This National Cancer Institute (NCI) booklet is for you—a woman who has just been diagnosed with **cervical cancer**. The disease begins on the surface of the **cervix**. If not treated, the **cancer** invades more deeply into the cervix. This is called **invasive cervical cancer**.

> This booklet shows words that may be new to you in **bold**. See the **Words to Know** section to learn what a new word means and how to pronounce it.

In 2012, more than 12,000 women in the United States will be diagnosed with invasive cervical cancer. Most will be younger than 55.

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

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

You can read this booklet from front to back. Or you can read only the sections you need right now.

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

For the latest information about cervical cancer, please visit NCI's website at **http://www.cancer.gov/cancertopics/types/cervical**.

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

This booklet is only about invasive cervical cancer. It's not about abnormal cells found only on the surface of the cervix or about other cervical cell changes. These changes are treated differently from invasive cervical cancer.

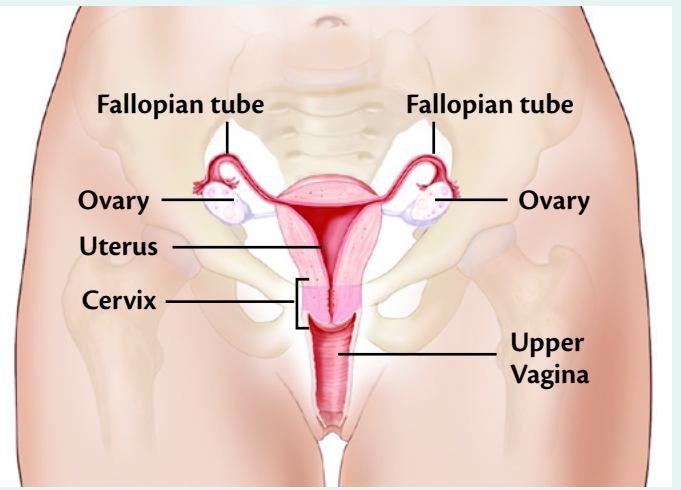
Women with abnormal cells only on the surface of the cervix may want to read the NCI booklet *Understanding Cervical Changes: A Health Guide for Women* instead. It tells about abnormal cells and describes the treatment options.

The Cervix

The cervix is part of a woman's **reproductive system**. It's in the **pelvis**. The cervix is the lower, narrow part of the **uterus** (womb).

The cervix is a passageway:

- The cervix connects the uterus to the **vagina**. During a **menstrual period**, blood flows from the uterus through the cervix into the vagina. The vagina leads to the outside of the body.
- The cervix makes **mucus**. During sex, mucus helps **sperm** move from the vagina through the cervix into the uterus.
- During pregnancy, the cervix is tightly closed to help keep the baby inside the uterus. During childbirth, the cervix opens to allow the baby to pass through the vagina.



This picture shows the cervix and nearby organs.

Cancer Cells

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

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

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

Growths on the cervix can be **benign** (not cancer) or **malignant** (cancer):

- **Benign growths** (**polyps**, **cysts**, or **genital warts**):
  - are not harmful
  - don't invade the tissues around them
- **Malignant growths** (cervical cancer):
  - may sometimes be a threat to life
  - can invade nearby tissues and organs
  - can spread to other parts of the body

Cervical cancer begins in cells on the surface of the cervix. Over time, the cervical cancer can invade more deeply into the cervix and nearby tissues.

Cervical cancer cells can spread by breaking away from the cervical tumor. They can travel through **lymph vessels** to nearby **lymph nodes**. Also, cancer cells can spread through the **blood vessels** to the lungs, liver, or bones.

After spreading, cancer cells may attach to other tissues and grow to form new tumors that may damage those tissues. See the **Staging** section on page 10 for information about cervical cancer that has spread.

Risk Factors

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

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

Studies have found that **infection** with the **virus** called **HPV** is the cause of almost all cervical cancers. Most adults have been infected with HPV at some time in their lives, but most infections clear up on their own. An HPV infection that doesn't go away can cause cervical cancer in some women. The NCI fact sheet *HPV and Cancer* has more information.

Other risk factors, such as smoking, can act to increase the risk of cervical cancer among women infected with HPV even more. The NCI booklet *Understanding Cervical Changes* describes other risk factors for cervical cancer.

A woman's risk of cervical cancer can be reduced by getting regular cervical cancer **screening** tests. If abnormal cervical cell changes are found early, cancer can be prevented by removing or killing the changed cells before they become cancer cells.

Another way a woman can reduce her risk of cervical cancer is by getting an **HPV vaccine** before becoming sexually active (between the ages of 9 and 26). Even women who get an HPV vaccine need regular cervical cancer screening tests.

Symptoms

Early cervical cancers usually don't cause symptoms. When the cancer grows larger, women may notice abnormal vaginal bleeding:

- Bleeding that occurs between regular menstrual periods
- Bleeding after sexual intercourse, douching, or a **pelvic exam**
- Menstrual periods that last longer and are heavier than before
- Bleeding after going through **menopause**

Women may also notice…

- Increased vaginal discharge
- Pelvic pain
- Pain during sex

Cervical cancer, infections, or other health problems may cause these symptoms. A woman with any of these symptoms should tell her doctor so that problems can be diagnosed and treated as early as possible.

Diagnosis

If you have symptoms of cervical cancer, your doctor will try to find out what's causing the problems. You may have the following tests:

- **Lab tests:** The doctor or nurse scrapes a sample of cells from the cervix. For a **Pap test**, the lab checks the sample for cervical cancer cells or abnormal cells that could become cancer later if not treated. For an HPV test, the same sample is tested for HPV infection. HPV can cause cell changes and cervical cancer.

- **Cervical exam:** The doctor uses a **colposcope** to look at the cervix. The colposcope combines a bright light with a magnifying lens to make tissue easier to see. This exam is usually done in the doctor's office or clinic.

- **Tissue sample:** The removal of tissue to look for cancer cells is a **biopsy**. Most women have cervical tissue removed in the doctor's office, and usually only **local anesthesia** is needed.

  The doctor will remove tissue in one of the following ways:

  - **Punch biopsy**: The doctor uses a sharp tool to pinch off small samples of cervical tissue.
  - **LEEP**: The doctor uses an electric wire loop to slice off a thin, round piece of cervical tissue.
  - **Endocervical curettage**: The doctor uses a **curette** (a small, spoon-shaped instrument) to scrape a small sample of tissue from the cervical canal. Some doctors may use a thin, soft brush instead of a curette.

- **Cone biopsy**: The doctor removes a cone-shaped sample of tissue. A cone biopsy lets the **pathologist** look at the tissue beneath the surface of the cervix to learn whether it has abnormal cells. The doctor may do this test in the hospital under **general anesthesia**.

A pathologist checks the tissue under a microscope for cancer cells. In most cases, a biopsy is the only sure way to tell whether cancer is present.

Removing tissue from the cervix may cause some bleeding or other discharge. The area usually heals quickly. Some women also feel some pain similar to menstrual cramps. Your doctor can suggest medicine that will help relieve any pain.

For more information about tests, cell changes, and treatment for these changes, you may want to read the NCI booklet *Understanding Cervical Changes*.

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

- Which biopsy method do you recommend?
- How will tissue be removed?
- Will I have to go to the hospital?
- How long will it take? Will I be awake? Will it hurt?
- Are there any risks? What are the chances of infection or bleeding after the test?
- For how many days afterward should I avoid using tampons, douching, or having sex?
- Can the test affect my ability to get pregnant and have children?
- How soon will I know the results? Who will explain them to me?
- If I do have cancer, who will talk to me about the next steps? When?

Staging

If the biopsy shows that you have cancer, your doctor will need to learn the extent (stage) of the disease to help you choose the best treatment. The stage is based on whether the cancer has invaded nearby tissues or spread to other parts of the body. Cervical cancer spreads most often to nearby tissues in the pelvis or to lymph nodes. It may also spread to the lungs, liver, or bones.

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

Your doctor will do a pelvic exam, will feel for swollen lymph nodes, and may remove additional tissue. To learn the extent of disease, your doctor may order one or more tests:

- **Chest x-ray:** An **x-ray** of the chest can often show whether cancer has spread to the lungs.
- **CT scan:** An x-ray machine linked to a computer takes a series of detailed pictures of your pelvis, abdomen, or chest. Before a **CT scan**, you may receive **contrast material** by **injection** in your arm or hand, by mouth, or by **enema**. The contrast material makes abnormal areas easier to see. A tumor in the liver, lungs, or elsewhere in the body can show up on the CT scan.

- **MRI:** A powerful magnet linked to a computer makes detailed pictures of your pelvis and **abdomen**. Before **MRI**, you may receive an injection of contrast material. MRI can show whether cancer has invaded tissues near the cervix or has spread from the cervix to tissues in the pelvis or abdomen.

The stage is based on where cancer is found. These are the stages of invasive cervical cancer:

- **Stage I:** Cancer cells are found only in the cervix.
- **Stage II:** The tumor has grown through the cervix and invaded the upper part of the vagina. It may have invaded other nearby tissues but not the **pelvic wall** (the lining of the part of the body between the hips) or the lower part of the vagina.
- **Stage III:** The tumor has invaded the pelvic wall or the lower part of the vagina. If the tumor is large enough to block one or both of the tubes through which urine passes from the kidneys, lab tests may show that the kidneys aren't working well.
- **Stage IV:** The tumor has invaded the **bladder** or **rectum**. Or, the cancer has spread to other parts of the body, such as the lungs.

Treatment

Treatment options for women with cervical cancer are…

- **Surgery**
- **Radiation therapy**
- **Chemotherapy**
- **A combination of these methods**

The choice of treatment depends mainly on the size of the tumor and whether the cancer has spread. The treatment choice may also depend on whether you would like to become pregnant someday.

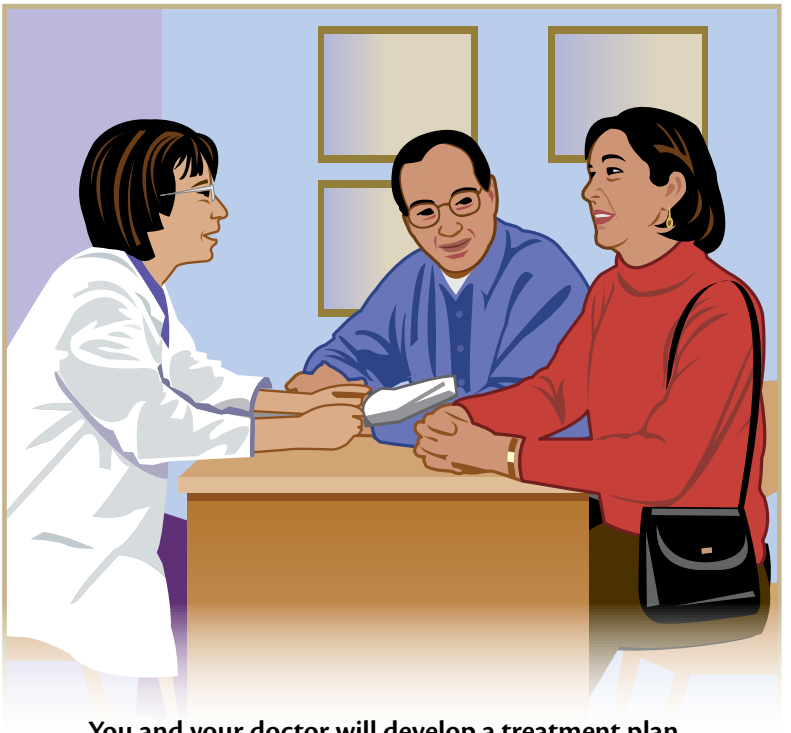
Your doctor may refer you to a specialist, or you may ask for a referral. You may want to see a **gynecologic oncologist**, a doctor who specializes in treating female cancers. Other specialists who treat cervical cancer include **gynecologists**, **medical oncologists**, and **radiation oncologists**. Your health care team may also include an **oncology nurse** and a **registered dietitian**.

Your health care team can describe your treatment choices, the expected results of each, and the possible **side effects**. Because cancer treatments often damage healthy cells and tissues, side effects are common. These side effects depend on many factors, including the type of treatment. Side effects may not be the same for each person, and they may even change from one treatment session to the next. Before treatment starts, ask your health care team about possible side effects and how treatment may change your normal activities. You and your health care team can work together to develop a treatment plan that meets your medical and personal needs.

At any stage of the disease, **supportive care** is available to control pain and other symptoms, to relieve the side effects of treatment, and to ease emotional concerns. You can get information about coping on NCI's website at **http://www.cancer.gov/cancertopics/coping**.

Also, you can get information about supportive care from NCI's Cancer Information Service at **1–800–4–CANCER (1–800–422–6237)**. Or, chat using **LiveHelp**, NCI's instant messaging service, at **http://www.cancer.gov/livehelp**.

You may want to talk with your doctor about taking part in a **clinical trial**. Clinical trials are research studies testing new treatments. They are an important option for women with all stages of cervical cancer. See the section on **Taking Part in Cancer Research** on page 28.



You and your doctor will develop a treatment plan.

You may want to ask the doctor these questions before treatment begins:

- What is the stage of my disease? Has the cancer spread? If so, where?
- May I have a copy of the report from the pathologist?
- What are my treatment choices? Which do you recommend for me? Will I have more than one kind of treatment?
- What are the expected benefits of each kind of treatment?
- What are the risks and possible side effects of each treatment? What can we do to control the side effects?
- What can I do to prepare for treatment?
- Will I have to stay in the hospital? If so, for how long?
- What is the treatment likely to cost? Will my insurance cover the cost?
- How will treatment affect my normal activities?
- How may treatment affect my sex life?
- Will I be able to get pregnant and have children after treatment? Should I preserve eggs before treatment starts?
- What can I do to take care of myself during treatment?
- What is my chance of a full recovery?
- How often will I need checkups after treatment?
- Would a research study (clinical trial) be right for me?

Surgery

Surgery is an option for women with Stage I or II cervical cancer. You and your **surgeon** can talk about the types of surgery and which may be right for you.

If you have a small tumor, the type of surgery may depend on whether you want to get pregnant and have children later on. Some women with very early cervical cancer may decide with their surgeon to have only the cervix, part of the vagina, and the lymph nodes in the pelvis removed (**radical trachelectomy**).

Other women may choose to have the cervix and uterus removed (**complete hysterectomy**). The surgeon may also remove some tissue around the cervix, part of the vagina, the **fallopian tubes**, or the **ovaries**. In addition, the surgeon may remove lymph nodes near the tumor.

It's common to feel tired or weak for a while after surgery for cervical cancer. The time it takes to heal is different for each woman. You'll probably be able to leave the hospital within a couple of days. Most women return to their normal activities within 4 to 8 weeks after surgery.

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

After a trachelectomy, some women need to have a tube put into the bladder to drain urine. It usually can be removed a few days after surgery.

After a hysterectomy, some women become constipated or have nausea and vomiting. In addition, some women lose control of their bladder or have trouble emptying their bladder. These effects are usually temporary.

After a hysterectomy, you'll stop having menstrual periods, and you won't be able to become pregnant.

After the ovaries are removed, menopause occurs at once. You may have hot flashes, vaginal dryness, and night sweats. These symptoms are caused by the sudden loss of female hormones. Talk with your health care team about your symptoms so that you can develop a treatment plan together. There are drugs and lifestyle changes that can help, and most symptoms go away or lessen with time.

Surgery to remove lymph nodes may cause swelling (**lymphedema**) in one or both legs. Ask your health care team about how you may prevent or control the swelling. Information about lymphedema is available on NCI's website at **http://www.cancer.gov/cancertopics/coping**.

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

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

- Do you recommend surgery for me? If so, which kind? Will my ovaries be removed? Do I need to have lymph nodes removed?
- What is the goal of surgery?
- What are the risks of surgery?
- How will I feel after surgery? If I have pain, how will it be controlled?
- How long will I have to be in the hospital?
- Will I have any lasting side effects?
- When will I be able to resume normal activities?

Radiation Therapy

Radiation therapy uses high-energy rays to kill cancer cells. It's an option for women with any stage of cervical cancer. Women with early cervical cancer may choose radiation therapy instead of surgery. It also may be used after surgery to destroy any cancer cells that remain in the area. Women with cancer that extends beyond the cervix may have radiation therapy and **chemotherapy**.

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

- **External radiation therapy:** A large machine directs radiation at your pelvis or other areas with cancer. The treatment usually is given in a hospital or clinic. You may receive **external radiation therapy** 5 days a week for several weeks. Each treatment takes only a few minutes.

- **Internal radiation therapy** (also called **brachytherapy**): A narrow cylinder is placed inside your vagina, and a **radioactive** substance is loaded into the cylinder. Usually, a session of **internal radiation therapy** lasts only a few minutes. The cylinder and substance are removed, and you can go home. The short session may be repeated two or more times over several weeks. When the radioactive substance is removed, no radioactivity is left in your body. With a less common method of internal radiation therapy, you may stay in the hospital for several days during treatment.

Although radiation therapy is painless, it may cause side effects. The side effects depend mainly on how much radiation is given and which part of your body is treated. Radiation to the abdomen and pelvis may cause nausea,

vomiting, diarrhea, or urinary problems. You may lose hair in your genital area. Also, skin on the abdomen and pelvis may become red, dry, and tender.

You may have dryness, itching, or burning in your vagina. Your doctor may advise you to wait until a few weeks after radiation treatment ends to have sex.

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

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

It may also help to know that most side effects go away when treatment ends. However, you may want to discuss with your doctor the possible long-term effects of radiation therapy. For example, radiation therapy may make the vagina narrower. A narrow vagina can make sex or follow-up exams difficult. There are ways to prevent this problem. If it does occur, however, your health care team can tell you about ways to expand the vagina.

Another possible long-term effect is damage to the ovaries. Menstrual periods usually stop, and women may have hot flashes and vaginal dryness. Menstrual periods may return for some women, especially younger women. Women who may want to get pregnant after radiation therapy should ask their health care team about ways to preserve their eggs before treatment starts.

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

You may want to ask the doctor these questions before having radiation therapy:

- What is the goal of this treatment?
- How will the radiation be given?
- Will I need to stay in the hospital? If so, for how long?
- When will the treatments begin? How often will I have them? When will they end?
- How will I feel during treatment? Are there side effects?
- How will we know if the radiation therapy is working?
- Will I be able to continue my normal activities during treatment?
- How will radiation therapy affect my sex life?
- Are there lasting side effects?

Chemotherapy

Chemotherapy uses drugs to kill cancer cells. For the treatment of cervical cancer, chemotherapy is usually combined with radiation therapy. For cancer that has spread to distant organs, chemotherapy may be used alone.

Most drugs for cervical cancer are given directly into a vein (**intravenously**) through a thin needle. Some drugs can be taken by mouth. Most women receive chemotherapy in a clinic or at the doctor's office. Drugs that are swallowed may be taken at home instead. Some women need to stay in the hospital during treatment.

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

- **Blood cells:** When chemotherapy lowers the levels of healthy blood cells, you're more likely to get infections, bruise or bleed easily, and feel very weak and tired. Your health care team will check for low levels of blood cells. If the levels are low, your health care team may stop the chemotherapy for a while or reduce the dose of drug. They may also give you medicines that can help your body make new blood cells.
- **Cells in hair roots:** Chemotherapy may cause hair loss. If you lose your hair, it will grow back, but it may change in color and texture.
- **Cells that line the digestive tract:** Chemotherapy can cause a poor appetite, nausea and vomiting, diarrhea, or mouth and lip sores. Your health care team can give you medicines and suggest other ways to help with these problems.

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

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

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

- Why do I need this treatment?
- Which drug or drugs will I have?
- How do the drugs work?
- What are the expected benefits of the treatment?
- What are the risks and possible side effects of treatment? What can we do about them?
- When will treatment start? When will it end?
- How will treatment affect my normal activities?

Second Opinion

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

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

It may take some time and effort to gather your medical records and see another doctor. In most cases, it's not a problem to take several weeks to get a second opinion. The delay in starting treatment usually will not make treatment less effective. To make sure, you should discuss this delay with your doctor.

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

Also, you can get information about treatment centers near you from NCI's Cancer Information Service. Call **1–800–4–CANCER (1–800–422–6237)**. Or, chat using **LiveHelp**, NCI's instant messaging service, at **http://www.cancer.gov/livehelp**.

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

Nutrition

Eating well is important before, during, and after cancer treatment. You need the right amount of calories to maintain a good weight. You also need enough protein to keep up your strength. Eating well may help you feel better and have more energy.

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

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

Eating well may help you feel better.

Follow-up Care

You'll need regular checkups (such as every 3 to 6 months) after treatment for cervical cancer. Checkups help ensure that any changes in your health are noted and treated if needed. If you have any health problems between checkups, contact your doctor.

Cervical cancer may come back after treatment. Your doctor will check for the return of cancer. Checkups may include a physical exam, Pap test, and chest x-ray.

You may find it helpful to read the NCI booklet *Facing Forward: Life After Cancer Treatment*. You may also want to read the NCI fact sheet *Follow-up Care After Cancer Treatment*.

You may want to ask your doctor these questions after you have finished treatment:

- How often will I need checkups?
- How often will I need a Pap test?
- What other follow-up tests do you suggest for me?
- Between checkups, what health problems or symptoms should I tell you about?

Sources of Support

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

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

Here's where you can go for support:

- Doctors, nurses, and other members of your health care team can answer questions about treatment, working, or other activities.
- Social workers, counselors, or members of the clergy can be helpful if you want to talk about your feelings or concerns. Often, social workers can suggest resources for financial aid, transportation, home care, or emotional support.
- Support groups also can help. In these groups, patients or their family members meet with other patients or their families to share what they have learned about coping with cancer and the effects of treatment. Groups may offer support in person, over the telephone, or on the Internet. You may want to talk with a member of your health care team about finding a support group.

- NCI's Cancer Information Service can help you locate programs, services, and NCI publications. Call **1–800–4–CANCER (1–800–422–6237)**. Or, chat using **LiveHelp**, NCI's instant messaging service, at **http://www.cancer.gov/livehelp**.

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

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

Talk with your doctor about your concerns.

Taking Part in Cancer Research

Doctors all over the world are conducting many types of clinical trials (research studies in which people volunteer to take part). Research has already led to advances in the prevention, diagnosis, and treatment of cervical cancer.

Doctors continue to search for new and better ways to treat cervical cancer. They are testing new treatments, including new drugs, combinations, and schedules. Some studies are combining surgery, chemotherapy, and radiation therapy.

Clinical trials are designed to find out whether new treatments are safe and effective. Even if the women in a trial don't benefit directly, they may still make an important contribution by helping doctors learn more about cervical cancer and how to control it. Although clinical trials may pose some risks, researchers do all they can to protect their patients.

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

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

NCI's Cancer Information Service can answer your questions and provide information about clinical trials. Contact CIS at **1–800–4–CANCER (1–800–422–6237)** or at **LiveHelp** at **http://www.cancer.gov/livehelp**.

Words to Know

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

Abdomen (AB-doh-men): The area of the body that contains the pancreas, stomach, intestines, liver, gallbladder, and other organs.

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

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

Bladder (BLA-der): The organ that stores urine.

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

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

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

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

Cervical cancer (SER-vih-kul KAN-ser): Cancer that forms in tissues of the cervix (the organ connecting the uterus and vagina). Cervical cancer is almost always caused by human papillomavirus (HPV) infection.

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

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

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

Colposcope (KOL-poh-SKOPE): A lighted magnifying instrument used to examine the vagina and cervix.

Complete hysterectomy (kum-PLEET HIS-teh-REK-toh-mee): Surgery to remove the entire uterus, including the cervix. Also called total hysterectomy.

Cone biopsy (BY-op-see): Surgery to remove a cone-shaped piece of tissue from the cervix and cervical canal. Cone biopsy may be used to diagnose or treat a cervical condition. Also called conization.

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

CT scan: A series of detailed pictures of areas inside the body taken from different angles. The pictures are created by a computer linked to an x-ray machine. Also called CAT scan, computed tomography scan (kum-PYOO-ted tuh-MAH-gruh-fee skan), computerized axial tomography scan, and computerized tomography.

Curette (kyoo-RET): A spoon-shaped instrument with a sharp edge.

Cyst (sist): A sac or capsule in the body. It may be filled with fluid or other material.

Endocervical curettage (en-do-SER-vih-kul kyoo-reh-TAHZH): A procedure in which the mucous membrane of the cervical canal is scraped using a spoon-shaped instrument called a curette.

Enema (EH-neh-muh): The injection of a liquid through the anus into the large bowel.

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

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

General anesthesia (A-nes-THEE-zhuh): A temporary loss of feeling and a complete loss of awareness that feels like a very deep sleep. It is caused by special drugs or other substances called anesthetics. General anesthesia keeps patients from feeling pain during surgery or other procedures.

Genital wart (JEH-nih-tul): A raised growth on the surface of the genitals caused by human papillomavirus (HPV) infection. The HPV in genital warts is very contagious and can be spread by skin-to-skin contact, usually during oral, anal, or genital sex with an infected partner.

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

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

HPV: A type of virus that can cause abnormal tissue growth (for example, warts) and other changes to cells. Infection for a long time with certain types of HPV can cause cervical cancer. HPV may also play a role in some other types of cancer, such as anal, vaginal, vulvar, penile, oropharyngeal, and squamous cell skin cancers. Also called human papillomavirus (HYOO-mun PA-pih-LOH-muh-VY-rus).

HPV vaccine (vak-SEEN): A vaccine used to prevent genital warts, anal cancer, cervical cancer, vaginal cancer, and vulvar cancer caused by certain types of human papillomavirus (HPV). It is also used to prevent lesions that are caused by those viruses and that can lead to anal, cervical, vaginal, or vulvar cancer. Also called human papillomavirus vaccine.

Infection (in-FEK-shun): Invasion and multiplication of germs in the body. Infections can occur in any part of the body, and can spread throughout the body. The germs may be bacteria, viruses, yeast, or fungi. They can cause a fever and other problems, depending on where the infection occurs. When the body's natural defense system is strong, it can often fight the germs and prevent infection. Some cancer treatments can weaken the natural defense system.

Injection (in-JEK-shun): Use of a syringe and needle to push fluids or drugs into the body; often called a "shot."

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

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

Invasive cervical cancer (in-VAY-siv SER-vih-kul KAN-ser): Cancer that has spread from the surface of the cervix to tissue deeper in the cervix or to other parts of the body.

LEEP: A technique that uses electric current passed through a thin wire loop to remove abnormal tissue. Also called loop electrosurgical excision procedure (ee-LEK-troh-SER-jih-kul ek-SIH-zhun proh-SEE-jer) and loop excision.

Local anesthesia (LOH-kul A-nes-THEE-zhuh): A temporary loss of feeling in one small area of the body caused by special drugs or other substances called anesthetics. The patient stays awake but has no feeling in the area of the body treated with the anesthetic.

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

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

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

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

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

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

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

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

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

Mucus (MYOO-kus): A thick, slippery fluid produced by the membranes that line certain organs of the body, including the nose, mouth, throat, and vagina.

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

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

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

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

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

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

Pelvic wall: The muscles and ligaments that line the part of the body between the hips.

Pelvis: The lower part of the abdomen, located between the hip bones.

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

Punch biopsy (BY-op-see): Removal of a small disk-shaped sample of tissue using a sharp, hollow device. The tissue is then examined under a microscope.

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

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

Radical trachelectomy (RA-dih-kul TRAY-kee-LEK-toh-mee): Surgery to remove the cervix (the end of the uterus that forms a canal between the uterus and the vagina), the upper part of the vagina, and certain pelvic lymph nodes.

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

Rectum: The last several inches of the large intestine closest to the anus.

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

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

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

Screening: Checking for disease when there are no symptoms. Since screening may find diseases at an early stage, there may be a better chance of curing the disease. Examples of cancer screening tests are the mammogram (breast), colonoscopy (colon), and Pap test and HPV test (cervix). Screening can also include checking for a person's risk of developing an inherited disease by doing a genetic test.

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

Sperm: The male reproductive cell, formed in the testicle. A sperm unites with an egg to form an embryo.

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

Surgeon (SER-jun): A doctor who removes or repairs a part of the body by operating on the patient.

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

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

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

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

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

Virus (VY-rus): In medicine, a very simple microorganism that infects cells and may cause disease. Because viruses can multiply only inside infected cells, they are not considered to be alive.

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

National Cancer Institute Publications

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

You may read NCI publications online and print your own copy. Also, you may order publications:

- **NCI's telephone service:** People in the United States and its territories may order these and other NCI publications by calling NCI's Cancer Information Service at **1–800–4–CANCER (1–800–422–6237)**.

- **NCI's website:** Many NCI publications may be viewed, downloaded, and ordered from **http://www.cancer.gov/publications**.

Publications by Topic

- **Cervical Changes**
  - *Understanding Cervical Changes: A Health Guide for Women*

- **HPV**
  - *HPV and Cancer*
  - *Human Papillomavirus (HPV) Vaccine*

Cancer Treatment and Supportive Care

- *How To Find a Doctor or Treatment Facility If You Have Cancer* (also in Spanish)
- *Radiation Therapy and You* (also in Spanish)
- *Understanding Radiation Therapy: What To Know About External Beam Radiation Therapy* (also in Spanish)
- *Understanding Radiation Therapy: What To Know About Brachytherapy (A Type of Internal Radiation Therapy)* (also in Spanish)
- *Chemotherapy and You* (also in Spanish)
- *Eating Hints* (also in Spanish)
- *Pain Control* (also in Spanish)

Research Studies

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

Coping With Cancer

- *Taking Time: Support for People with Cancer*
- *Managing Radiation Therapy Side Effects: What Women Can Do About Changes in Sexuality and Fertility* (also in Spanish)

Life After Cancer Treatment

- *Facing Forward: Life After Cancer Treatment* (also in Spanish)
- *Follow-up Care After Cancer Treatment*
- *Facing Forward: Making a Difference in Cancer*

Advanced or Recurrent Cancer

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

Complementary Medicine

- *Thinking about Complementary & Alternative Medicine*

Caregivers

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

The National Cancer Institute

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

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