Cervical Cancer Early Detection, Diagnosis, and Staging

Detection and Diagnosis

Catching cancer early often allows for more treatment options. Some early cancers may have signs and symptoms that can be noticed, but that is not always the case.

- Can Cervical Cancer Be Found Early?
- Cervical Cancer Prevention and Early Detection
- Signs and Symptoms of Cervical Cancer
- Tests for Cervical Cancer

Stages and Outlook (Prognosis)

After a cancer diagnosis, staging provides important information about the extent of cancer in the body and anticipated response to treatment.

- Cervical Cancer Stages
- Survival Rates for Cervical Cancer, by Stage

Questions to Ask About Cervical Cancer

Here are some questions you can ask your cancer care team to help you better understand your cancer diagnosis and treatment options.

- What Should You Ask Your Doctor About Cervical Cancer?
Can Cervical Cancer Be Found Early?

The best way to find cervical cancer early is to have regular screening with a Pap test (which may be combined with a test for human papilloma virus or HPV). As Pap testing became routine in this country, finding pre-invasive lesions (pre-cancers) of the cervix became far more common than finding invasive cancer. Being alert to any signs and symptoms of cervical cancer can also help avoid unnecessary delays in diagnosis. Early detection greatly improves the chances of successful treatment and can prevent any early cervical cell changes from becoming cancerous.

More information about using the Pap test and the HPV test to find cervical cancer early, including the American Cancer Society’s Guidelines for cervical cancer screening can be found in Cervical Cancer Prevention and Early Detection\(^1\).

References

See all references for Cervical Cancer


Last Medical Review: November 16, 2016 Last Revised: December 5, 2016

Signs and Symptoms of Cervical Cancer

Women with early cervical cancers and pre-cancers usually have no symptoms. Symptoms often do not begin until the cancer becomes invasive and grows into nearby tissue. When this happens, the most common symptoms are:

- Abnormal vaginal bleeding, such as bleeding after vaginal sex, bleeding after menopause, bleeding and spotting between periods, and having (menstrual) periods that are longer or heavier than usual. Bleeding after douching or after a pelvic exam may also occur.
• An unusual discharge from the vagina. The discharge may contain some blood and may occur between your periods or after menopause.
• Pain during sex.

These signs and symptoms can also be caused by conditions other than cervical cancer. For example, an infection can cause pain or bleeding. Still, if you have any of these symptoms, see a health care professional right away. Ignoring symptoms may allow the cancer to grow to a more advanced stage and lower your chance for effective treatment.

Even better, don't wait for symptoms to appear. Have regular screening tests for cervical cancer.¹

References

See all references for Cervical Cancer

Tests for Cervical Cancer

The first step in finding cervical cancer is often an abnormal Pap test result. This will lead to further tests which can diagnose cervical cancer.

Cervical cancer may also be suspected if you have symptoms¹ like abnormal vaginal bleeding or pain during sex. Your primary doctor or gynecologist often can do the tests needed to diagnose pre-cancers and cancers and may also be able to treat a pre-cancer.

If there is a diagnosis of invasive cancer, your doctor should refer you to a gynecologic oncologist, a doctor who specializes in cancers of women's reproductive systems.
Tests for women with symptoms of cervical cancer or abnormal Pap results

Medical history and physical exam

First, the doctor will ask you about your personal and family medical history. This includes information related to risk factors and symptoms of cervical cancer. A complete physical exam will help evaluate your general state of health. The doctor will do a pelvic exam and may do a Pap test if one has not already been done. In addition, your lymph nodes will be felt for evidence of metastasis (cancer spread).

The Pap test is a screening test, not a diagnostic test. It cannot tell for certain if you have cervical cancer. An abnormal Pap test result may mean more testing, sometimes including tests to see if a cancer or a pre-cancer is actually present. The tests that are used include colposcopy (with biopsy), endocervical scraping, and cone biopsies.

Colposcopy

If you have certain symptoms that are suggestive of cancer or if your Pap test result shows abnormal cells, you will need to have a test called colposcopy. You will lie on the exam table as you do with a pelvic exam. A speculum will be placed in the vagina to help the doctor see the cervix. The doctor will use a colposcope to examine the cervix. The colposcope is an instrument that stays outside the body and has magnifying lenses. It lets the doctor see the surface of the cervix closely and clearly. Colposcopy itself is usually no more uncomfortable than any other speculum exam. It can be done safely even if you are pregnant. Like the Pap test, it is better not to do it during your menstrual period.

The doctor will put a weak solution of acetic acid (similar to vinegar) on your cervix to make any abnormal areas easier to see. If an abnormal area is seen, a biopsy (removal of a small piece of tissue) will be done. The tissue is sent to a lab to be looked at under a microscope. A biopsy is the best way to tell for certain if an abnormal area is a pre-cancer, a true cancer, or neither. Although the colposcopy procedure is usually not painful, the cervical biopsy can cause discomfort, cramping, bleeding, or even pain in some women.

Cervical biopsies

Several types of biopsies can be used to diagnose cervical pre-cancers and cancers. If the biopsy can completely remove all of the abnormal tissue, it might be the only treatment needed.
Colposcopic biopsy

For this type of biopsy, first the cervix is examined with a colposcope to find the abnormal areas. Using a biopsy forceps, a small (about 1/8-inch) section of the abnormal area on the surface of the cervix is removed. The biopsy procedure may cause mild cramping, brief pain, and some slight bleeding afterward. A local anesthetic is sometimes used to numb the cervix before the biopsy.

Endocervical curettage (endocervical scraping)

Sometimes the transformation zone (the area at risk for HPV infection and pre-cancer) cannot be seen with the colposcope and something else must be done to check that area for cancer. This means taking a scraping of the endocervix by inserting a narrow instrument (called a curette) into the endocervical canal (the part of the cervix closest to the uterus). The curette is used to scrape the inside of the canal to remove some of the tissue, which is then sent to the laboratory for examination. After this procedure, patients may feel a cramping pain, and they may also have some light bleeding.

Cone biopsy

In this procedure, also known as conization, the doctor removes a cone-shaped piece of tissue from the cervix. The base of the cone is formed by the exocervix (outer part of the cervix), and the point or apex of the cone is from the endocervical canal. The tissue removed in the cone includes the transformation zone (the border between the exocervix and endocervix, where cervical pre-cancers and cancers are most likely to start).

A cone biopsy can also be used as a treatment to completely remove many pre-cancers and some very early cancers. Having had a cone biopsy will not prevent most women from getting pregnant, but if a large amount of tissue has been removed, women may have a higher risk of giving birth prematurely.

The methods commonly used for cone biopsies are the loop electrosurgical excision procedure (LEEP), also called the large loop excision of the transformation zone (LLETZ), and the cold knife cone biopsy.

- **Loop electrosurgical procedure (LEEP, LLETZ):** In this method, the tissue is removed with a thin wire loop that is heated by electricity and acts as a small knife. For this procedure, a local anesthetic is used, and it can be done in your doctor’s office.
- **Cold knife cone biopsy:** This method is done in a hospital. A surgical scalpel or a
laser is used to remove the tissue instead of a heated wire. You will receive anesthesia during the operation (either a general anesthesia, where you are asleep, or a spinal or epidural anesthesia, where an injection into the area around the spinal cord makes you numb below the waist). Having any type of cone biopsy will not prevent most women from getting pregnant, but if a large amount of tissue has been removed, women may have a higher risk of giving birth prematurely.

Pre-cancerous changes in a biopsy are called *cervical intraepithelial neoplasia* (CIN). Sometimes the term *dysplasia* is used instead of CIN. CIN is graded on a scale of 1 to 3 based on how much of the cervical tissue looks abnormal when viewed under the microscope.

**How biopsy results are reported**

- In CIN1, not much of the tissue looks abnormal, and it is considered the least serious cervical pre-cancer (mild dysplasia).
- In CIN2 more of the tissue looks abnormal (moderate dysplasia)
- In CIN3 most of the tissue looks abnormal; CIN3 is the most serious pre-cancer (severe dysplasia) and includes carcinoma in situ).

If a biopsy shows a pre-cancer, doctors will take steps to keep an actual cancer from developing. Treatment of women with abnormal pap results is discussed in *Cervical Cancer Prevention and Early Detection*

**Diagnostic tests for women with cervical cancer**

If a biopsy shows that cancer is present, your doctor may order certain tests to see how far the cancer has spread. Many of the tests described below are not necessary for every patient. Decisions about using these tests are based on the results of the physical exam and biopsy.

**Cystoscopy, proctoscopy, and examination under anesthesia**

These are most often done in women who have large tumors. They are not necessary if the cancer is caught early.

In cystoscopy a slender tube with a lens and a light is placed into the bladder through the urethra. This lets the doctor check your bladder and urethra to see if cancer is growing into these areas. Biopsy samples can be removed during cystoscopy for
pathologic (microscopic) testing. Cystoscopy can be done under a local anesthetic, but some patients may need general anesthesia. Your doctor will let you know what to expect before and after the procedure.

Proctoscopy is a visual inspection of the rectum through a lighted tube to check for spread of cervical cancer into your rectum.

Your doctor may also do a pelvic exam while you are under anesthesia to find out if the cancer has spread beyond the cervix.

**Imaging studies**

If your doctor finds that you have cervical cancer, certain imaging studies may be done to look inside the body. These tests can show if and where the cancer has spread, which will help you and your doctor decide on a treatment plan.

**Chest x-ray**

Your chest may be x-rayed to see if cancer has spread to your lungs. This is very unlikely unless the cancer is far advanced.

**Computed tomography (CT)**

CT scans are usually done if the tumor is larger or if there is concern about cancer spread. For more information, see [CT Scan for Cancer](#).

**Magnetic resonance imaging (MRI)**

MRI looks at soft tissue parts of the body sometimes better than other imaging tests. Your doctor will decide which imaging test is best for your situation.

For more information, see [MRI for Cancer](#).

**Intravenous urography**

Intravenous urography (also known as intravenous pyelogram, or IVP) is an x-ray of the urinary system taken after a special dye is injected into a vein. This test can find abnormal areas in the urinary tract, caused by the spread of cervical cancer. The most common finding is a blockage of the ureters (tubes that connect the kidneys to the bladder) by the cancer. IVP is rarely used for patients with cervical cancer because CT and MRI are also good at finding abnormal areas in the urinary tract, as well as others not seen with an IVP.
Positron emission tomography (PET scan)

PET scans use glucose (a form of sugar) that contains a radioactive atom. Cancer cells in the body absorb large amounts of the radioactive sugar and a special camera can detect the radioactivity.

This test can help see if the cancer has spread to lymph nodes. PET scans can also be useful if your doctor thinks the cancer has spread but doesn’t know where, because they scan your whole body.

PET scans are often combined with CT scans using a machine that can do both at the same time. The combined PET/CT test is rarely used for patients with early cervical cancer, but may be used to look for more advanced cancer or if radiation treatment is a possibility. For more information on this test, see Nuclear Medicine Scans for Cancer⁵.

Hyperlinks


References

See all references for Cervical Cancer (https://www.cancer.org/content/cancer/en/cancer/cervical-cancer/references.html)

Last Medical Review: November 16, 2016 Last Revised: December 5, 2016
Cervical Cancer Stages

After someone is diagnosed with cervical cancer, doctors will try to figure out if it has spread, and if so, how far. This process is called staging. The stage of a cancer describes the extent of the cancer in the body. It helps determine how serious the cancer is and how best to treat it. The stage is one of the most important factors in deciding how to treat the cancer and determining how successful treatment might be.

To determine the cancer’s stage after a cervical cancer diagnosis, doctors try to answer these questions:

- How far has the cancer grown into the cervix?
- Has the cancer reached nearby structures?
- Has the cancer spread to the nearby lymph nodes or to distant organs?

Information from exams and tests is used to determine the size of the tumor, how deeply the tumor has invaded tissues in and around the cervix, and its spread to distant places (metastasis). For more information see Cancer Staging.

The FIGO (International Federation of Gynecology and Obstetrics) staging system is used most often for cancers of the female reproductive organs, including cervical cancer. For cervical cancer, the clinical stage is used and is based on the results of the doctor’s physical exam, biopsies, imaging tests, and a few other tests that are done in some cases, such as cystoscopy and proctoscopy. It is not based on what is found during surgery. If surgery is done, a pathologic stage can be determined from the findings at surgery, but it does not change your clinical stage. Your treatment plan is based on the clinical stage.

The American Joint Committee on Cancer (AJCC) TNM staging system is another staging system based on 3 key pieces of information:

- **T** describes how far the main (primary) tumor has grown into the cervix and whether it has grown into nearby tissues.
- **N** indicates any cancer spread to lymph nodes near the cervix. Lymph nodes are bean-sized collections of immune system cells, to which cancers often spread first.
- **M** indicates if the cancer has spread (metastasized) to distant sites, such as other organs or lymph nodes that are not near the cervix.
FIGO stages are the same as AJCC stages.

Numbers or letters after T, N, and M provide more details about each of these factors. Higher numbers mean the cancer is more advanced. Once a person’s T, N, and M categories have been determined, this information is combined in a process called stage grouping to assign an overall stage.

Cervical cancer stage ranges from stages I (1) through IV (4).

As a rule, the lower the number, the less the cancer has spread. A higher number, such as stage IV, means a more advanced cancer. And within a stage, an earlier letter means a lower stage. Cancers with similar stages tend to have a similar outlook and are often treated in much the same way.

Cervical cancer staging can be complex. If you have any questions about your stage, please ask your doctor to explain it to you in a way you understand. (An explanation of the TNM and FIGO systems is in the stage table below.)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Stage grouping</th>
<th>FIGO Stage</th>
<th>Stage description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>T1 Any N M0</td>
<td>I</td>
<td>The cancer cells have grown from the surface of the cervix into deeper tissues of the cervix. The cancer may also be growing into the body of the uterus, but it has not grown outside the uterus (T1). It might or might not have not spread to nearby lymph nodes (N0). It has not spread to distant sites (M0).</td>
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<tr>
<td>IA</td>
<td>T1a Any N M0</td>
<td>IA</td>
<td>There is a very small amount of cancer, and it can be seen only under a microscope (T1a). It might or might not have not spread to nearby lymph nodes (N0). It has not spread to distant sites (M0).</td>
</tr>
<tr>
<td>IA1</td>
<td>T1a1 Any N M0</td>
<td>IA1</td>
<td>The area of cancer is less than 3 mm (about 1/8-inch) deep and less than 7 mm (about 1/4-inch) wide (T1a1). It might or might not have not spread to nearby lymph nodes (N0). It has not spread to distant sites (M0).</td>
</tr>
<tr>
<td>Stage</td>
<td>T1a2</td>
<td>Any N M0</td>
<td>IA2</td>
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<tr>
<td>IB</td>
<td>T1b</td>
<td>Any N M0</td>
<td>IB</td>
</tr>
<tr>
<td>IB1</td>
<td>T1b</td>
<td>Any N M0</td>
<td>IB1</td>
</tr>
<tr>
<td>IB2</td>
<td>T1b2</td>
<td>Any N M0</td>
<td>IB2</td>
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<tr>
<td>II</td>
<td>T2</td>
<td>Any N M0</td>
<td>II</td>
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<tr>
<td>IIA</td>
<td>T2a</td>
<td>Any N M0</td>
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<tr>
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<td>IIA1</td>
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<td>Stage</td>
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<tr>
<td>M0</td>
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<tr>
<td>IIA2</td>
<td>T2a2</td>
<td>Any N</td>
<td>M0</td>
</tr>
<tr>
<td>IIB</td>
<td>T2b</td>
<td>Any N</td>
<td>M0</td>
</tr>
<tr>
<td>III</td>
<td>T3</td>
<td>Any N</td>
<td>M0</td>
</tr>
<tr>
<td>IIIA</td>
<td>T3a</td>
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<td>M0</td>
</tr>
<tr>
<td>IIIB</td>
<td>T3b</td>
<td>Any N</td>
<td>M0</td>
</tr>
<tr>
<td>IVA</td>
<td>T4</td>
<td>Any N</td>
<td>M0</td>
</tr>
<tr>
<td>IVB</td>
<td>Any T</td>
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<td>M1</td>
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It has not spread to distant sites (M0).

The cancer has spread to distant organs beyond the pelvic area, such as distant lymph nodes, lungs, bones or liver. (M1)

**T categories for cervical cancer**

The T category describes how far the main tumor has grown into the cervix or beyond.

The T categories are described in the table above, except for:

- **TX:** Main tumor cannot be assessed due to lack of information
- **T0:** No evidence of a primary tumor

**N categories for cervical cancer**

The N category describes spread only to the lymph nodes near the cervix. Spread to distant nodes is considered metastasis (described in the M category).

The N categories are described in the table above, except for:

- **NX:** Regional lymph nodes cannot be assessed due to lack of information.
- **N0:** There is no regional lymph node spread.
- **N1:** The cancer has spread to nearby lymph nodes

**M categories for cervical cancer**

The M categories are described in the table above.

**Hyperlinks**

3. [https://www.cancer.org/content/cancer/en/treatment/understanding-your-diagnosis/staging.html](https://www.cancer.org/content/cancer/en/treatment/understanding-your-diagnosis/staging.html)
References


See all references for Cervical Cancer

Last Medical Review: December 11, 2017 Last Revised: December 11, 2017

Survival Rates for Cervical Cancer, by Stage

Survival rates tell you what percentage of people with the same type and stage of cancer are still alive a certain amount of time (usually 5 years) after they were diagnosed. They can’t tell you how long you will live, but they may help give you a better understanding about how likely it is that your treatment will be successful. Some people will want to know the survival rates for their cancer, and some people won’t. If you don’t want to know, you don’t have to.

What is a 5-year survival rate?

Statistics on the outlook for a certain type of cancer are often given as 5-year survival rates. The 5-year survival rate is the percentage of people who live at least 5 years after being diagnosed with cancer. For example, a 5-year survival rate of 70% means that an estimated 70 out of 100 people who have that cancer are still alive 5 years after being diagnosed. Keep in mind, however, that many of these people live much longer than 5 years after diagnosis.

But remember, all survival rates are estimates – your outlook can vary based on a number of factors specific to you.

Cancer survival rates don’t tell the whole story
Survival rates are often based on previous outcomes of large numbers of people who had the disease, but they can’t predict what will happen in any particular person’s case. There are a number of limitations to remember:

- The numbers below are among the most current available. But to get 5-year survival rates, doctors have to look at people who were treated at least 5 years ago. As treatments are improving over time, women who are now being diagnosed with cervical cancer may have a better outlook than these statistics show.
- These statistics are based on when the cancer was first diagnosed. They do not apply to cancers that later come back or spread, for example.
- The outlook for women with cervical cancer varies by the stage (extent) of the cancer – in general, the survival rates are higher for women with earlier stage cancers. But other factors can also affect a woman’s outlook, such as her age and overall health, and how well the cancer responds to treatment. The outlook for each woman is specific to her circumstances.

Your doctor can tell you how these numbers apply to you.

**Survival rates for cervical cancer**

The rates below were published in 2010 in the 7th edition of the AJCC staging manual. They are based on data collected by the National Cancer Data Base from people diagnosed between 2000 and 2002. These are the most recent statistics available for survival by the 2010 staging system. Keep in mind the staging system in Cervical Cancer Stages has been updated to the 2017 version which is very similar to the 2010 version.

- The 5-year survival rate for people with stage 0 cervical cancer is about 93%.
- For stage IA cervical cancer, the 5-year survival rate is about 93%. For stage IB cancer, the 5-year survival rate is about 80%.
- For stage IIA cervical cancer, the 5-year survival rate is about 63%. For stage IIB cancer, the 5-year survival rate is about 58%.
- The 5-year survival rate for stage IIIA cervical cancer is about 35%. For stage IIIB cancer, the 5-year survival rate is about 32%.
- Stage IVA cervical cancer has a 5-year survival rate of about 16%, and stage IVB cancer has a 5-year survival rate of about 15%. Still, there are often treatment options available for women with these stages of cancer.
Remember, these survival rates are only estimates – they can’t predict what will happen to any individual person. We understand that these statistics can be confusing and may lead you to have more questions. Talk to your doctor to better understand your specific situation.

References

See all references for Cervical Cancer

Last Medical Review: December 11, 2017 Last Revised: December 11, 2017

What Should You Ask Your Doctor About Cervical Cancer?

It is important for you to have frank, open discussions with your cancer care team. They want to answer all of your questions, so that you can make informed treatment and life decisions. For instance, consider these questions:

When you’re told you have cervical cancer

• What type\(^1\) of cervical cancer do I have?
• Has my cancer spread outside the cervix?
• Can the stage of my cancer be determined and what does that mean?
• Will I need other tests before we can decide on treatment?
• Do I need to see any other doctors or health professionals?
• If I’m concerned about the costs and insurance coverage for my diagnosis and treatment, who can help me?

When deciding on a treatment plan
• What are my treatment choices?
• What treatment do you recommend and why?
• How much experience do you have treating this type of cancer?
• Should I get a second opinion? How do I do that? Can you recommend someone?
• What would the goal of the treatment be?
• How quickly do we need to decide on treatment?
• What should I do to be ready for treatment?
• How long will treatment last? What will it be like? Where will it be done?
• What risks or side effects are there to the treatments you suggest? Are there things I can do to reduce these side effects?
• How might treatment affect my daily activities?
• What are the chances my cancer will recur (come back) with these treatment plans?
• What will we do if the treatment doesn’t work or if the cancer recurs?
• Will I be able to have children after my treatment?
• What are my treatment options if I want to have children in the future?

**During treatment**

Once treatment begins, you’ll need to know what to expect and what to look for. Not all of these questions may apply to you, but asking the ones that do may be helpful.

• How will we know if the treatment is working?
• Is there anything I can do to help manage side effects?
• What symptoms or side effects should I tell you about right away?
• How can I reach you on nights, holidays, or weekends?
• Do I need to change what I eat during treatment?
• Are there any limits on what I can do?
• What kind of exercise should I do, and how often?
• Can you suggest a mental health professional I can see if I start to feel overwhelmed, depressed, or distressed?

**After treatment**

• Will I need a special diet after treatment?
• Are there any limits on what I can do?
What other symptoms should I watch for?
What kind of exercise should I do now?
What type of follow-up will I need after treatment?
How often will I need to have follow-up exams and imaging tests?
Will I need any blood tests?
How will we know if the cancer has come back? What should I watch for?
What will my options be if the cancer comes back?

Along with these sample questions, be sure to write down some of your own. For instance, you might want more information about recovery times. Or you might ask if you qualify for a clinical trial.

Keep in mind that doctors aren’t the only ones who can give you information. Other health care professionals, such as nurses and social workers, can answer some of your questions. To find out more about speaking with your health care team, see The Doctor-Patient Relationship.

References
See all references for Cervical Cancer

Last Medical Review: September 19, 2014 Last Revised: January 29, 2016

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