Hodgkin Lymphoma 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 Hodgkin Lymphoma Be Found Early?
- Signs and Symptoms of Hodgkin Lymphoma
- Tests for Hodgkin Lymphoma

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.

- Hodgkin Lymphoma Stages
- Survival Rates for Hodgkin Lymphoma by Stage

Questions to Ask About Hodgkin Lymphoma

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 Hodgkin Lymphoma?

Can Hodgkin Lymphoma Be Found Early?
Screening tests or exams are used to look for a disease in people who have no symptoms. At this time, there are no widely recommended screening tests for Hodgkin lymphoma. This is because no screening test has been shown to lower the risk of dying from this cancer. Still, in some cases Hodgkin lymphoma can be found early.

The best way to find Hodgkin disease early is to pay attention to possible symptoms. The most common symptom is enlargement of one or more lymph nodes, causing a lump or bump under the skin which is usually not painful. This is most often on the side of the neck, in the armpit, or in the groin. More often this is caused by something like an infection, rather than Hodgkin lymphoma, but it's important to have such lumps checked by a doctor.

Other symptoms can include:

- Fever that doesn't go away
- Drenching night sweats that often require changing bed sheets or night clothes
- Unexplained weight loss
- Severe and constant itching or pain in the lymph nodes after drinking alcohol

Careful, regular medical checkups may be helpful for people with known risk factors for Hodgkin lymphoma, such as a strong family history. These people do not often get Hodgkin lymphoma, but they (and their doctors) should know about any possible symptoms and signs they might have.

- References

Last Medical Review: February 10, 2017 Last Revised: March 28, 2017

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The most common symptom of Hodgkin lymphoma is a lump in the neck, under the arm, or in the groin, which is an enlarged lymph node. It doesn’t usually hurt, but the area may become painful after drinking alcohol. The lump might grow larger over time, or new lumps might appear near it (or even in other parts of the body).

But Hodgkin lymphoma is not the most common cause of lymph node swelling. Most enlarged lymph nodes, especially in children, are caused by an infection. Lymph nodes that grow because of infection are called reactive or hyperplastic nodes. These often hurt when they are touched. If an infection is the cause, the node should return to its normal size within a few weeks after the infection goes away.

Other cancers can also cause swollen lymph nodes. If you have an enlarged lymph node, especially if you haven’t had a recent infection, it’s best to see your doctor so that the cause can be found and treated without delay, if needed.

**General (non-specific) symptoms**

Some people with Hodgkin disease have what are known as *B symptoms*:

- Fever (which can come and go over several days or weeks) without an infection
- Drenching night sweats
- Weight loss without trying (at least 10% of body weight over 6 months)

These symptoms are also important in determining the stage of Hodgkin lymphoma and a person’s prognosis (outlook). See [Hodgkin Lymphoma Stages](#).

Other possible symptoms of Hodgkin lymphoma include:

- Itching skin
- Feeling tired
- Loss of appetite

Sometimes the only symptom might be feeling tired all the time.

**Cough, trouble breathing, chest pain**

If Hodgkin lymphoma affects lymph nodes inside the chest, the swelling of these nodes might press on the windpipe (trachea) and make you cough or even have trouble breathing, especially when lying down. Some people might have pain behind the breast bone.

Having one or more of the symptoms above doesn’t mean you definitely have Hodgkin
lymphoma. In fact, many of these symptoms are more likely to be caused by other conditions, such as an infection. Still, if you or your child has any of these symptoms, have them checked by a doctor so that the cause can be found and treated, if needed.

- References

Tests for Hodgkin Lymphoma

Most people with Hodgkin lymphoma see their doctor because they have certain symptoms, or because they just don’t feel well and go in for a checkup.

If a person has signs or symptoms that suggest Hodgkin lymphoma, exams and tests will be done to find out for sure and, if so, to determine the exact type.

Medical history and physical exam

Your doctor will want to get a thorough medical history, including information about symptoms, possible risk factors, family history, and other medical conditions.

Next, the doctor will examine you, paying special attention to the lymph nodes and other areas of the body that might be affected, including the spleen and liver. Because infections are the most common cause of enlarged lymph nodes, especially in children, the doctor will look for an infection in the part of the body near any swollen lymph nodes.

The doctor also might order blood tests to look for signs of infection or other problems. If the doctor suspects that Hodgkin lymphoma might be causing the symptoms, he or she might recommend a biopsy of a swollen lymph node.

Biopsies

Because swollen lymph nodes are more likely to be caused by something other than
Hodgkin lymphoma, such as an infection, doctors often wait a few weeks to see if they shrink on their own as the infection goes away. Antibiotics may also be prescribed to see if they cause the nodes to shrink.

If the nodes don’t shrink or if they continue to grow, a lymph node (or a small piece of a node) is removed to be looked at under a microscope and for other lab tests. This procedure, called a biopsy, is needed to be sure of the diagnosis. If it is Hodgkin lymphoma, the biopsy sample can also show what type it is.

**Types of biopsies**

There are different types of biopsies. Doctors choose the best one based on the situation.

**Excisional or incisional biopsy:** This is the preferred and most common type of biopsy for an enlarged lymph node. The doctor cuts through the skin to remove the lymph node.

- If the entire lymph node is removed, it is an **excisional** biopsy.
- If a small part of a larger tumor or node is removed, it is an **incisional** biopsy.

If the node is just under the skin, this is a fairly simple operation that can sometimes be done with numbing medicine (local anesthesia). But if the node is inside the chest or abdomen, the patient is sedated or given general anesthesia (where he or she is in a deep sleep). This type of biopsy almost always provides enough of a tissue sample to make a diagnosis of Hodgkin lymphoma and to tell the exact type.

**Needle biopsy:** Needle biopsies are less invasive than excisional or incisional biopsies, but the drawback is that they might not remove enough of a sample to diagnose Hodgkin lymphoma (or to determine which type it is). There are 2 main types of needle biopsies:

- A **fine needle aspiration (FNA) biopsy** uses a very thin, hollow needle attached to a syringe to withdraw (aspirate) a small amount of fluid and tiny bits of tissue.
- A **core needle biopsy** uses a larger needle to remove a slightly larger piece of tissue.

To biopsy an enlarged node just under the skin, the doctor can aim the needle while feeling the node. If a node or tumor is deep inside the body, the doctor can guide the needle using a computed tomography (CT) scan or ultrasound (see below).

Most doctors do not use needle biopsies (especially FNA biopsies) to diagnose Hodgkin
lymphoma. But if the doctor suspects that your lymph node swelling is caused by an infection or by the spread of cancer from another organ (such as the breast, lungs, or thyroid), a needle biopsy might be the first type of biopsy done. An excisional biopsy may still be needed to diagnose Hodgkin lymphoma, even after a needle biopsy has been done.

If Hodgkin lymphoma has already been diagnosed, needle biopsies are sometimes used to check abnormal areas in other parts of the body that might be from the lymphoma spreading or coming back after treatment.

**Bone marrow aspiration and biopsy:** These tests are not used to diagnose Hodgkin lymphoma, but they may be done after the diagnosis is made to see if the lymphoma is in the bone marrow. The bone marrow aspiration and biopsy are usually done at the same time. The samples are taken from the back of the pelvic (hip) bone, although sometimes they may be taken from other bones.

In **bone marrow aspiration**, you lie on a table (either on your side or on your belly). After cleaning the skin over the hip, the doctor numbs the area and the surface of the bone by injecting a local anesthetic, which may cause a brief stinging or burning sensation. A thin, hollow needle is then inserted into the bone, and a syringe is used to suck out a small amount of liquid bone marrow. Even with the anesthetic, most patients have some brief pain when the marrow is removed.

A **bone marrow biopsy** is usually done just after the aspiration. A small piece of bone and marrow is removed with a slightly larger needle that is pushed down into the bone. The biopsy may also cause some brief pain.

Most children having a bone marrow aspiration and biopsy either receive medicine to make them drowsy or have general anesthesia so they are asleep.

**Lab tests of biopsy samples**

All biopsy samples are looked at under a microscope by a pathologist (a doctor specially trained to recognize cancer cells), who will look for Hodgkin lymphoma cells (called *Reed-Sternberg cells*). Sometimes the first biopsy does not give a definite answer and more biopsies are needed.

Looking at the samples under the microscope is often enough to diagnose Hodgkin lymphoma (and what type it is), but sometimes further lab tests are needed.

**Immunohistochemistry:** This lab test looks for certain proteins on cells, such as CD15
and CD30, which are found on the surface of the Reed-Sternberg cells in classic Hodgkin lymphoma. Tests for other proteins may point to nodular lymphocyte predominant Hodgkin lymphoma, to non-Hodgkin lymphoma (rather than Hodgkin lymphoma), or to other diseases entirely.

**Imaging tests**

Imaging tests use x-rays, sound waves, magnetic fields, or radioactive particles to make pictures of the inside of the body. Imaging tests may be done for a number of reasons, including:

- To look for possible causes of certain symptoms, such as enlarged lymph nodes in the chest
- To help determine the stage (extent) of Hodgkin lymphoma
- To help show if treatment is working
- To look for possible signs of cancer coming back after treatment

**Chest x-ray**

Hodgkin lymphoma often enlarges lymph nodes in the chest, which can usually be seen on a chest x-ray.

**Computed tomography (CT) scan**

A CT scan combines many x-rays to make detailed cross-sectional images of your body. This scan can help tell if any lymph nodes or organs in your body are enlarged. CT scans are useful for looking for Hodgkin lymphoma in the neck, chest, abdomen, and pelvis.

**CT-guided needle biopsy:** A CT scan can also be used to guide a biopsy needle into a suspicious area. For this procedure, a person lies on the CT scanning table while the doctor moves a biopsy needle through the skin and toward the area. CT scans are repeated until the needle is in the right place. A biopsy sample is then removed and sent to the lab to be looked at under a microscope.

**Magnetic resonance imaging (MRI)**

Like CT scans, MRIs show detailed images of soft tissues in the body. But MRIs use radio waves and strong magnets instead of x-rays. This test is rarely used in Hodgkin
lymphoma, but if the doctor is concerned about spread to the spinal cord or brain, MRI is very useful for looking at these areas.

**Positron emission tomography (PET) scan**

For a [PET scan](#), you are injected with a slightly radioactive form of sugar, which collects especially in cancer cells. A special camera is then used to create a picture of areas of radioactivity in the body. The picture is not detailed like a CT or MRI scan, but it can provide helpful information about your whole body.

PET scans can be used for many reasons in a person with Hodgkin lymphoma:

- They can help show if an enlarged lymph node contains Hodgkin lymphoma.
- They can help spot small areas in the body that might be lymphoma, even if the area looks normal on a CT scan.
- They can help tell if the lymphoma is responding to treatment. Some doctors will repeat the PET scan after a few courses of chemotherapy. If it is working, the lymph nodes will no longer take up the radioactive sugar.
- They can be used after treatment to help decide if an enlarged lymph node still has cancer or if it is just scar tissue.

**PET/CT scan:** Some machines can do both a PET scan and a CT scan at the same time. This lets the doctor compare areas of higher radioactivity on the PET scan with the more detailed appearance of that area on the CT scan. PET/CT scans often can help pinpoint the areas of lymphoma better than a CT scan alone.

**Bone scan**

This test is not usually done unless a person is having bone pain or has lab test results that suggest the lymphoma might have reached the bones.

For this test, a radioactive substance (technetium) is injected into a vein. It travels to damaged areas of bone, and a special camera can then detect the radioactivity. Hodgkin lymphoma sometimes causes bone damage, which may be picked up on a bone scan. But bone scans can’t show the difference between cancers and non-cancerous problems, so further tests might be needed.

**Other tests**

**Blood tests**
Blood tests aren’t used to diagnose Hodgkin lymphoma, but they can help your doctor get a sense of how advanced it is and how well you might tolerate certain treatments.

The complete blood count (CBC) is a test that measures the levels of different cells in the blood. People with Hodgkin lymphoma can sometimes have abnormal blood counts. For example, if the lymphoma invades the bone marrow (where new blood cells are made) a person might have anemia (not enough red blood cells). A high white blood cell count is another possible sign of Hodgkin lymphoma, although it can also be caused by infection.

A test called an erythrocyte sedimentation rate (ESR) can help measure how much inflammation is in the body. It can be elevated in some people with Hodgkin lymphoma.

Blood tests might also be done to check liver and kidney function and to look for signs that the cancer might have reached the bones.

Your doctor might also suggest other blood tests to look for signs of certain infections:

- **HIV test**: especially if you have abnormal symptoms that might be related to HIV infection
- **Hepatitis B virus test**: if your doctor plans on using the drug rituximab (Rituxan) in your treatment, which could cause problems if you have this infection

**Tests of heart and lung function**

These tests might be done if certain chemotherapy drugs that could affect the heart or the lungs are going to be used.

- An echocardiogram (an ultrasound of the heart) or a MUGA scan can be used to check heart function.
- **Lung (pulmonary) function tests (PFTs)** can be used to see how well the lungs are working. For these tests, you breathe into a tube connected to a machine.

**References**

Hodgkin Lymphoma Stages

After someone is diagnosed with Hodgkin lymphoma, 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 how much cancer is in the body. It helps determine how serious the cancer is and how best to treat it. Doctors also use a cancer’s stage when talking about survival statistics.

Hodgkin lymphoma generally starts in the lymph nodes. If it spreads, it is usually to another set of nearby lymph nodes. It can invade (grow into) nearby organs as well. Rarely, Hodgkin lymphoma will start in an organ other than lymph nodes, such as a lung.

The stage is based on:

- Your medical history (if you have certain symptoms)
- The physical exam
- Biopsies
• Imaging tests, which typically include a chest x-ray, CT (computed tomography) scan of the chest/abdomen/pelvis, and PET (positron emission tomography) scan
• Bone marrow aspiration and biopsy (sometimes but not always done)
• These exams, tests, and biopsies are discussed in Tests for Hodgkin Lymphoma.

In general, the results of imaging tests such as PET and CT scans are the most important when determining the stage of the lymphoma.

**Lugano classification**

A staging system is a way for the cancer care team to sum up the extent of a cancer’s spread. The staging system for Hodgkin lymphoma is the **Lugano classification**, which is based on the older **Ann Arbor system**. It has 4 stages, labeled I, II, III, and IV.

For limited stage (I or II) Hodgkin lymphoma that affects an organ outside of the lymph system, the letter E is added to the stage (for example, stage IE or IIE).

**Stage I:** Either of the following means that the lymphoma is stage I:

• Hodgkin lymphoma is found in only 1 lymph node area or lymphoid organ such as the thymus (I).
• The cancer is found only in 1 area of a single organ outside the lymph system (IE).

**Stage II:** Either of the following means that the lymphoma is stage II:

• Hodgkin lymphoma is found in 2 or more lymph node areas on the same side of (above or below) the diaphragm, which is the thin muscle beneath the lungs that separates the chest and abdomen (II).
• The cancer extends locally from one lymph node area into a nearby organ (IIE).

**Stage III:** Either of the following means that the lymphoma is stage III:

• Hodgkin lymphoma is found in lymph node areas on both sides of (above and below) the diaphragm (III).
• Hodgkin lymphoma is in lymph nodes above the diaphragm, as well as in the spleen.

**Stage IV:** Hodgkin lymphoma has spread widely into at least one organ outside of the lymph system, such as the liver, bone marrow, or lungs.

Other modifiers may also be used to describe the Hodgkin lymphoma stage:
Bulky disease

This term is used to describe tumors in the chest that are at least as wide as the chest, or tumors in other areas that are at least 10 centimeters (about 4 inches) across. It is usually labeled by adding the letter X to the stage. It is especially important for stage II lymphomas, as bulky disease may require more intensive treatment.

A vs. B

Each stage may also be assigned a letter (A or B). B is added (stage IIIB, for example) if a person has any of these B symptoms:

- Loss of more than 10% of body weight over the previous 6 months (without dieting)
- Unexplained fever of at least 100.4°F (38°C)
- Drenching night sweats

If a person has any B symptoms, it usually means the lymphoma is more advanced, and more intensive treatment is often recommended. If no B symptoms are present, the letter A is added to the stage.

Resistant or recurrent Hodgkin lymphoma

Resistant or recurrent Hodgkin lymphoma is not part of the formal staging system, but doctors or nurses might use these terms to describe what is going on with the lymphoma in some cases.

- The terms resistant or progressive disease are used when the lymphoma does not go away or progresses (grows) while you are still being treated.
- Recurrent or relapsed disease means that Hodgkin lymphoma initially went away with treatment, but it has now come back. If the lymphoma returns, it may be in the same place where it started or in another part of the body. This may occur shortly after treatment or years later.

References


Survival Rates for Hodgkin Lymphoma
By Stage

Survival rates tell you what portion 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.

What is a 5-year survival rate?

Statistics on the outlook for a certain type and stage 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, the 5-year 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, people who are now being diagnosed with Hodgkin lymphoma may have a better outlook than these statistics show.
- These statistics are based on the stage of the cancer when it was first diagnosed. They do not apply to cancers that later come back or spread, for example.
- The outlook for people with Hodgkin lymphoma varies by the stage (extent) of the cancer – in general, the survival rates are higher for people with earlier stage cancers. But many other factors can affect a person’s outlook (see below). The outlook for each person is specific to their circumstances.

Your doctor should be able to tell you how these numbers may apply to you.

**Survival rates for Hodgkin lymphoma**

The numbers below come from the National Cancer Institute’s SEER database, looking at more than 8,000 people diagnosed with Hodgkin lymphoma between 1988 and 2001.

- The 5-year survival rate for people with stage I Hodgkin lymphoma is about 90%.
- For stage II Hodgkin lymphoma, the 5-year survival rate is about 90%.
- The 5-year survival rate for stage III Hodgkin lymphoma is about 80%.
- Stage IV Hodgkin lymphoma has a 5-year survival rate of about 65%.

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.
Other prognostic factors

Along with the stage of the Hodgkin lymphoma, other factors can affect a person’s prognosis (outlook). For example, having some factors means the lymphoma is likely to be more serious:

- Having **B symptoms or bulky disease**
- Being older than 45
- Being male
- Having a high white blood cell count (above 15,000)
- Having a low red blood cell count (hemoglobin level below 10.5)
- Having a low blood lymphocyte count (below 600)
- Having a low blood albumin level (below 4)
- Having a high erythrocyte sedimentation rate, or ESR (over 30 in someone with B symptoms, or over 50 for someone without B symptoms)

Some of these factors are used to help divide stage I or II Hodgkin lymphoma into **favorable** and **unfavorable** groups, which can affect how intense the treatment needs to be. To learn more, see [Treating Classic Hodgkin Lymphoma by Stage](https://www.cancer.gov/cancertopics/types/hodgkin).

**References**


Last Medical Review: February 10, 2017 Last Revised: March 28, 2017
What Should You Ask Your Doctor About Hodgkin Lymphoma?

It’s important to have honest, open discussions with your cancer care team. You should ask any question, no matter how minor it might seem. Here are some questions you might want to ask:

When you’re told you have Hodgkin lymphoma

- What type of Hodgkin lymphoma do I have?
- What is the stage (extent) of the lymphoma? What does this mean?
- Do I need any other tests before we can decide on treatment?
- Do I need to see any other doctors?
- 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

- How much experience do you have treating Hodgkin lymphoma?
- What are my treatment choices? Which do you recommend? Why?
- Does one type of treatment lessen the chance of the lymphoma coming back more than another?
- Should I get a second opinion before starting treatment? Can you suggest a doctor or cancer center?
- How soon do I need to start 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 are the short-term side effects from treatment? Can anything be done about them?
- What are the possible long-term side effects?
- Will I still be able to have children after my treatment? Can I do anything about this?
- How might treatment affect my daily activities?
• What are the chances the lymphoma will come back? What would we do if this happens?

**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 getting answers to 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?
• Are there any limits on what I can do?
• Can you suggest a mental health professional I can see if I start to feel overwhelmed, depressed, or distressed?

**After treatment**

• What type of follow-up will I need after treatment?
• What symptoms should I watch for?
• How will we know if the lymphoma has come back? What would my options be if that happens?

Along with these sample questions, be sure to write down your own questions. For instance, you might want more information about recovery times so that you can plan your work or school schedule. Or you might want to ask about clinical trials for which you may qualify.

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 communicating with your health care team, see The Doctor-Patient Relationship.

• References