Hodgkin Lymphoma Early Detection, Diagnosis, and Staging

Know the signs and symptoms of Hodgkin lymphoma. Find out how Hodgkin lymphoma is tested for, diagnosed, and staged.

Detection and Diagnosis

Finding cancer early, when it's small and hasn't spread, often allows for more treatment options. Some early cancers may have signs and symptoms that can be noticed, but that's 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 likely response to treatment.

- Hodgkin Lymphoma Stages
- Survival Rates for Hodgkin Lymphoma

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.
Questions to Ask About Hodgkin Lymphoma

Can Hodgkin Lymphoma Be Found Early?

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

The best way to find HL early is to be on the lookout for possible symptoms. The most common symptom is *enlargement or swelling of one or more lymph nodes*, causing a lump or bump under the skin which usually doesn't hurt. It's 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, not HL, but it's important to have such lumps checked by a doctor.

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

Hyperlinks


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Signs and Symptoms of Hodgkin Lymphoma
• **Lump(s) under the skin**
• **B symptoms**
• **General (non-specific) symptoms**
• **If you have symptoms**

You or your child can have (HL) and feel perfectly well. But HL often causes symptoms or changes that should be checked by a doctor.

**Lump(s) under the skin**

The most common symptom of HL 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 it may become painful after drinking alcohol. The lump might get bigger over time, or new lumps might appear near it or even in other parts of the body.

Still, HL 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’re touched. If an infection is the cause, the node should go back to its normal size after the infection goes away.

Other cancers can cause swollen lymph nodes, too. If you have an enlarged lymph node, especially if you haven’t had a recent infection, it’s best to see a doctor so that the cause can be found and treated, if needed.

**B symptoms**

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

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

These symptoms are an important part of staging HL and determining a person’s outlook.

**General (non-specific) symptoms**

Other possible symptoms of HL include:
• Itching skin
• Feeling tired (fatigue)
• Loss of appetite

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

**Cough, trouble breathing, chest pain**

If HL affects lymph nodes inside your 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.

**If you have symptoms**

Having one or more of the symptoms above doesn’t mean you definitely have HL. In fact, many of these symptoms are much more likely to be caused by other problems, like 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, if needed, treated.

**Hyperlinks**


**References**


Tests for Hodgkin Lymphoma

- Medical history and physical exam
- Biopsies
- Imaging tests
- Other tests

Most people with Hodgkin lymphoma (HL) see their doctor because they have certain symptoms, or because they just don’t feel well and go in for a check-up.

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

The doctor will want to get a thorough medical history. You'll be asked about symptoms, possible risk factors, family history, and other medical conditions.

Next, the doctor will examine you (or your child), paying close attention to lymph nodes and other parts 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 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 HL might be the problem, a biopsy of a swollen lymph node might be recommended.

Biopsies

Because swollen lymph nodes are more likely to be caused by something other than HL, like an infection, doctors often wait a few weeks to see if they shrink on their own as the infection goes away. You may be given antibiotics 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 taken out to be checked in the lab. This procedure, called a biopsy, is the only way to be sure of the diagnosis. If it is HL, the biopsy can also show what type it is.

Types of biopsies

There are different types of biopsies. Doctors choose the best one to do 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 whole lymph node is removed, it’s an excisional biopsy.
- If a small part of a larger tumor or node is removed, it’s an incisional biopsy.

If the node is just under the skin, the biopsy is fairly simple and can sometimes be done with numbing medicine (called local anesthesia). But if the node is inside the chest or
abdomen (belly), you'll be sedated or given general anesthesia (where drugs are used to put you in a deep sleep). This type of biopsy almost always provides enough tissue to make a diagnosis of HL and tell the exact type.

**Needle biopsy:** A needle biopsy is less invasive than excisional or incisional biopsies because there's no cut in the skin. But the drawback is that it might not get enough tissue to diagnose HL (or find out 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 take out (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, a CT scan or ultrasound (see below) can be used to guide the needle.

Most doctors do not use needle biopsies (especially FNA biopsies) to diagnose HL. But if the doctor suspects that 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 HL, even after a needle biopsy has been done.

If HL has already been diagnosed, needle biopsies are sometimes used to check changes (like swollen nodes) 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 HL, 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, but 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 skin and the surface of the bone by injecting a local anesthetic (numbing drug). This may cause a brief stinging or burning feeling. A thin, hollow needle is then pushed 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 pulled out.
A **bone marrow biopsy** is usually done just after the aspiration. A small piece or core of bone and marrow is removed with a slightly larger needle that’s pushed into the bone. The biopsy may also cause some brief pain.

Most children having a bone marrow aspiration and biopsy are either given medicine to make them drowsy or are given general anesthesia so they’re asleep while it’s done.

**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 doesn’t give a clear answer and more biopsies are needed.

Looking at the tissue samples under the microscope is often enough to diagnose HL (and what type it is), but sometimes more **lab tests** are needed.

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

**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 can be used in many ways, such as:

- 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

These are the imaging tests most commonly used:

**Chest x-ray**

HL often enlarges lymph nodes in the chest. This can often 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 HL in the neck, chest, abdomen (belly), 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 HL, 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, a slightly radioactive form of sugar is put into your blood. Over time, it collects in very active cells, like cancer cells. A special camera is then used to create a picture of the parts of the body where the radioactivity collected. The picture is not detailed like a CT or MRI scan, but it can give helpful information about your whole body.

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

- They can help show if an enlarged lymph node contains HL.
- They can help find small spots 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's 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's 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 pictures from the CT scan. PET/CT scans often can help pinpoint the areas of lymphoma better than a CT scan alone.

**Bone scan**

A [bone scan](#) isn’t 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 is injected into a vein. It travels to damaged areas of bone, and a special camera can then detect the radioactivity. HL 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-cancer problems, so more tests might be needed.

**Other tests**

**Blood tests**

Blood tests aren’t used to diagnose HL, 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 HL 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 HL, 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 HL.

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. Some women may have a [pregnancy test](#).

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

- **HIV test**: This may be done if you have abnormal symptoms that might be related to HIV infection.
- **Hepatitis B and C virus test**: Certain chemo drugs could cause problems if you have these infections.
Tests of heart and lung function

These tests might be done if certain chemo 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.

Hyperlinks


References


Hodgkin Lymphoma Stages

- **Lugano classification**

After someone is diagnosed with Hodgkin lymphoma (HL), 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.

HL generally starts in the lymph nodes. If it spreads, it's usually to another set of nearby lymph nodes. It can invade (grow into) nearby organs as well. Rarely, HL 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 (called **B symptoms**)
- The physical exam
- Biopsies
- Imaging tests, which typically include a chest x-ray, CT scan of the chest/abdomen/pelvis, and PET 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 used 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) HL 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 HL is stage I:

- HL is found in only 1 lymph node area or lymphoid organ such as the thymus (I).
- The cancer is found only in 1 part of 1 organ outside the lymph system (IE).

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

- HL 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 HL is stage III:

- HL is found in lymph node areas on both sides of (above and below) the diaphragm (III).
- HL is in lymph nodes above the diaphragm and in the spleen.

**Stage IV:** HL 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's usually labeled by adding the letter X to the stage. It's especially important for stage II lymphomas, because 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 HL is not part of the formal staging system, but doctors or nurses might use these terms to describe what's 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're being treated.
- **Recurrent** or **relapsed** disease means that HL went away with treatment, but it has now come back. If the lymphoma returns, it might be in the same place where it started or in another part of the body. This can happen shortly after treatment or years later.

**Hyperlinks**


**References**


Survival rates can give you an idea of 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.

Keep in mind that survival rates are estimates and are often based on previous outcomes of large numbers of people who had a specific cancer, but they can’t predict what will happen in any particular person’s case. These statistics can be confusing and may lead you to have more questions. Ask your doctor, who is familiar with your situation, how these numbers may apply to you.

What is a 5-year relative survival rate?
A relative survival rate compares people with the same stage of Hodgkin lymphoma to people in the overall population. For example, if the 5-year survival rate for a specific stage of Hodgkin lymphoma is 80%, it means that people who have that cancer are, on average, about 80% as likely as people who don't have that cancer to live 5 years after being diagnosed.

Where do these numbers come from?

The American Cancer Society relies on information from the Surveillance, Epidemiology, and End Results (SEER) database, maintained by the National Cancer Institute (NCI), to provide survival statistics for different types of cancer.

The SEER database tracks 5-year relative survival rates for Hodgkin lymphoma in the United States, based on how far the cancer has spread. The SEER database, however, does not group cancers by the Lugano classification (stage 1, stage 2, stage 3, etc.). Instead, it groups cancers into localized, regional, and distant stages:

- **Localized**: The cancer is limited to one lymph node area, one lymphoid organ, or one organ outside the lymph system.
- **Regional**: The cancer reaches from one lymph node area to a nearby organ, is found in two or more lymph node areas on the same side of (above or below) the diaphragm, or is considered bulky disease.
- **Distant**: The cancer has spread to distant parts of the body, such as the lungs, liver, or bone marrow, or to lymph node areas above and below the diaphragm.

### 5-year relative survival rates for Hodgkin lymphoma

These numbers are based on people diagnosed with Hodgkin lymphoma between 2012 and 2018.

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<th>SEER Stage</th>
<th>5-Year Relative Survival Rate</th>
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<tr>
<td>Regional</td>
<td>95%</td>
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<tr>
<td>Distant</td>
<td>83%</td>
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<tr>
<td>All SEER stages combined</td>
<td>89%</td>
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</table>
Understanding the numbers

- These numbers apply only to the stage of the cancer when it is first diagnosed. They do not apply later on if the cancer grows, spreads, or comes back after treatment.
- These numbers don’t take everything into account. Survival rates are grouped based on how far the cancer has spread, but your age and overall health, how well the lymphoma responds to treatment, and other prognostic factors (described below) can also affect your outlook.
- People now being diagnosed with Hodgkin lymphoma may have a better outlook than these numbers show. Treatments have improved over time, and these numbers are based on people who were diagnosed and treated at least 5 years earlier.

Other prognostic factors

Along with the stage of the Hodgkin lymphoma, other factors can affect a person’s prognosis (outlook). For example, having some of these 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.
Hyperlinks


References


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Questions to Ask About Hodgkin
Lymphoma

- When you’re told you have Hodgkin lymphoma
- When deciding on a treatment plan
- During treatment
- After treatment

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?
- Will 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 starts, 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 examples, be sure to write down your own questions. For instance, you might need to know more 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.

**Hyperlinks**

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Written by


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