**Lymphomas**

Cancer starts when cells start to grow out of control. Cells in nearly any part of the body can become cancer, and can then spread to other parts of the body. Lymphomas are cancers that start in white blood cells called lymphocytes. There are 2 main types of lymphoma:

• Hodgkin lymphoma (HL)

• Non-Hodgkin lymphoma (NHL)

They behave, spread, and respond to treatment differently.

**The lymph system**

To understand what Hodgkin lymphoma is, it helps to know about the lymph system (also known as the lymphatic system). The lymph system is part of the immune system, which helps fight infections and some other diseases.

The lymph system also helps control the flow of fluids in the body. The lymph system is made up mainly of cells called lymphocytes, a type of white blood cell. There are 2 main types of lymphocytes:

**• B lymphocytes (B cells):** B cells make proteins called antibodies to help protect the body from germs (bacteria and viruses).

**• T lymphocytes (T cells):** There are many types of T cells. Some T cells destroy germs or abnormal cells in the body. Other T cells help boost or slow the activity of other immune system cells.

Hodgkin lymphoma usually starts in B lymphocytes.

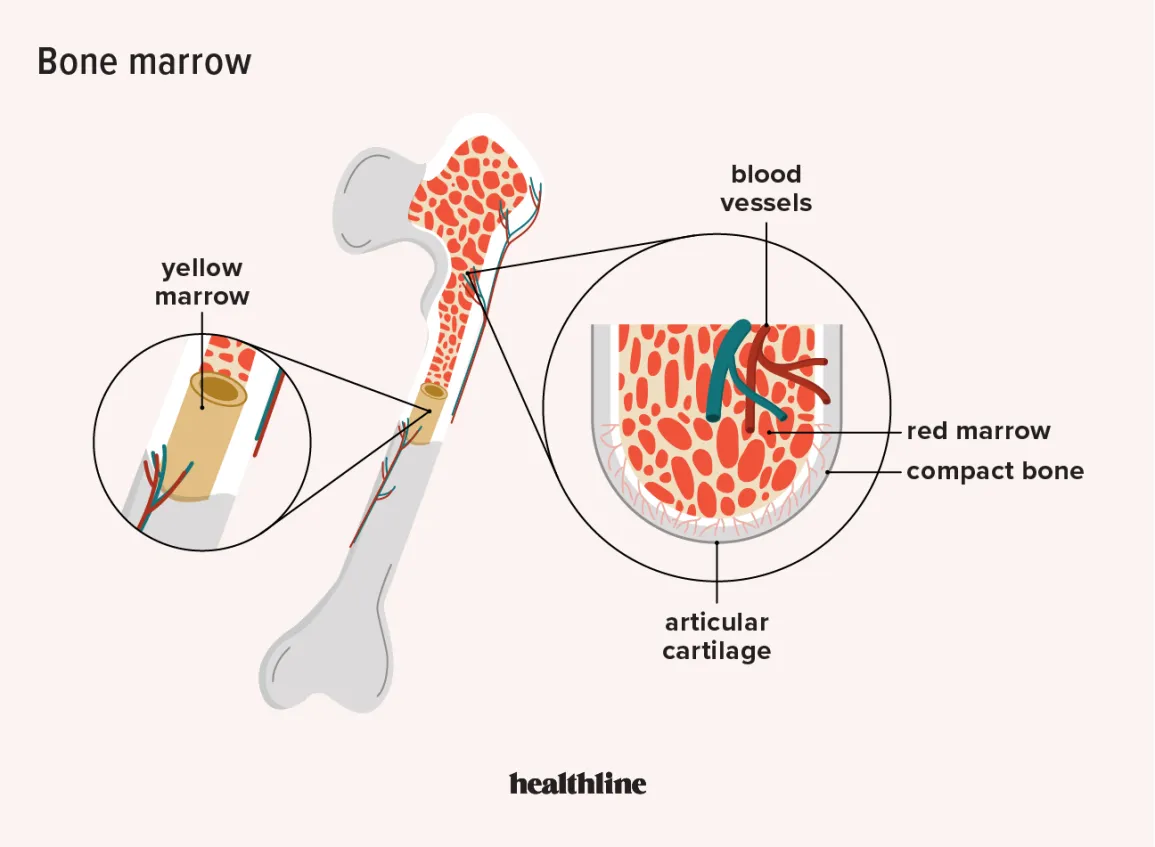
**Hodgkin's Lymphoma**

Hodgkin's lymphoma — formerly known as Hodgkin's disease — is a cancer of the lymphatic system, which is part of your immune system. It may affect people of any age, but is most common in people between 20 and 40 years old and those over 55.

In Hodgkin's lymphoma, cells in the lymphatic system grow abnormally and may spread beyond it. Hodgkin's lymphoma is one of two common types of cancers of the lymphatic system. The other type, non-Hodgkin's lymphoma, is far more common. Advances in diagnosis and treatment of Hodgkin's lymphoma have helped give people with this disease the chance for a full recovery. The prognosis continues to improve for people with Hodgkin's lymphoma.

**Start and spread of Hodgkin lymphoma**

Lymph tissue is in many parts of your body, so Hodgkin lymphoma can start almost anywhere.



**Figure 1:** Anatomy of the lymph system, showing the lymph vessels and lymph organs including lymph nodes, tonsils, thymus, spleen, and bone marrow. Lymph (clear fluid) and lymphocytes travel through the lymph vessels and into the lymph nodes where the lymphocytes destroy harmful substances. The lymph enters the blood through a large vein near the heart.

Source: *https://www.cancer.gov/types/lymphoma/patient/adult-hodgkin-treatment-pdq*

The major sites of lymphoid tissue are:

**Lymph nodes**: Lymph nodes are bean-sized collections of lymphocytes and other immune system cells. They're found throughout the body, including inside the chest, abdomen (belly), and pelvis. They're connected to each other by a system of lymphatic vessels.

**Lymph vessels:** A network of tiny tubes (a lot like blood vessels) that connect lymph nodes and carry immune cells in a clear fluid called lymph. Lymph is collected from around the body and put into the bloodstream.

**Spleen:** The spleen is an organ that's under the lower ribs on your left side. The spleen is part of your immune system. It makes lymphocytes and other immune system cells. It also stores healthy blood cells and filters out damaged blood cells, bacteria, and cell waste.

**Bone marrow:** The bone marrow is the liquid, spongy tissue inside certain bones. New blood cells (including some lymphocytes) are made there.

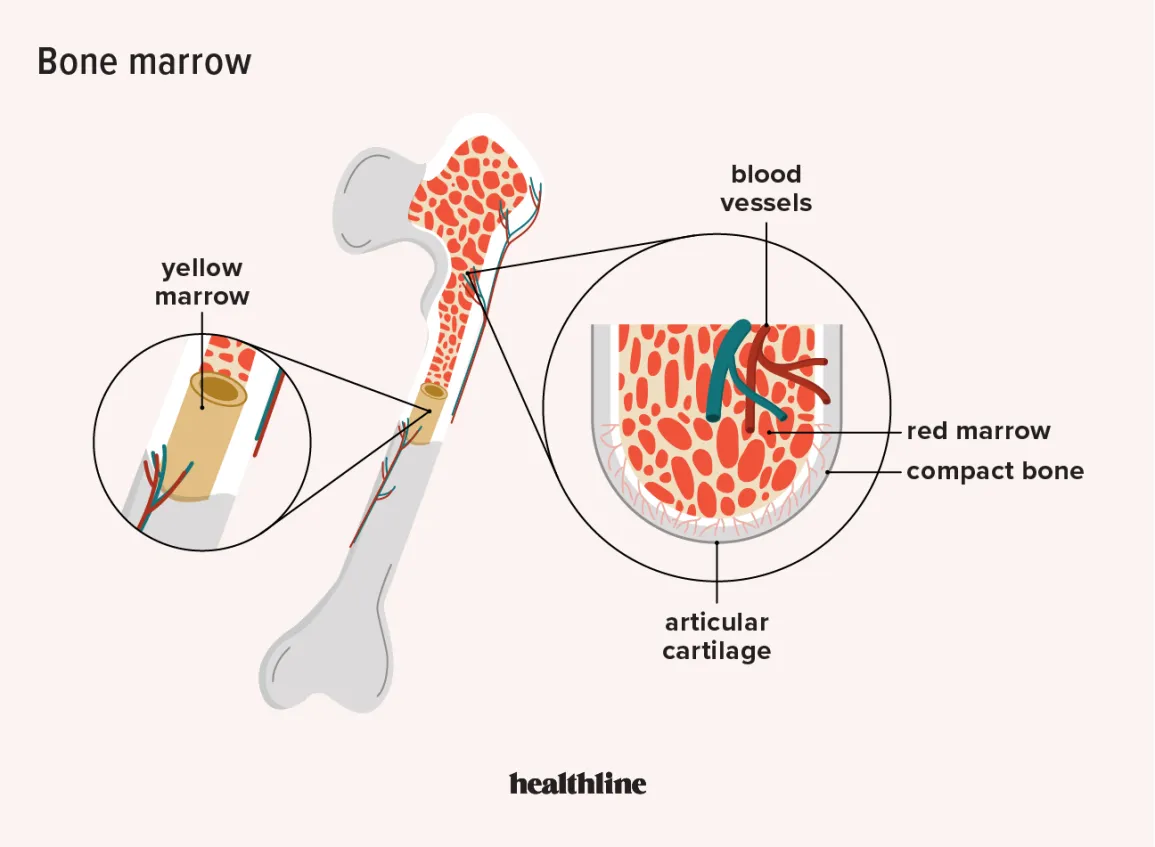
**Thymus:** The thymus is a small organ behind the upper part of the breastbone and in front of the heart. It's important for T lymphocyte development.

**Adenoids and tonsils:** These are collections of lymph tissue in the back of your throat. They help make antibodies against germs that are breathed in or swallowed.

**Digestive tract:** The stomach, intestines, and many other organs also have lymph tissue.

Although Hodgkin lymphoma can start almost anywhere, most often it starts in lymph nodes in the upper part of the body. The most common sites are in the chest, neck, or under the arms.

Hodgkin lymphoma most often spreads through the lymph vessels from lymph node to lymph node. Rarely, late in the disease, it can invade the bloodstream and spread to other parts of the body, such as the liver, lungs, and/or bone marrow.

Figure 2: Lymph nodes are bean-sized collections of lymphocytes. About 600 of these nodes cluster throughout the lymphatic system, for example, near the knee, groin, neck and armpits.

Source: [*https://www.mayoclinic.org/diseases-conditions/hodgkins-lymphoma/symptoms-causes/syc-20352646*](https://www.mayoclinic.org/diseases-conditions/hodgkins-lymphoma/symptoms-causes/syc-20352646)

**Epidemiology and etiology**

HL is uncommon with approximately 1,600 cases diagnosed each year in the UK, accounting for 15 per cent of lymphomas and 0.5 per cent of all cancers. 5 However, it is relatively common in young adults and is the third most common cancer in 15-29 year-olds. There is evidence of genetic susceptibility to HL, with a very modest increased risk for first-degree relatives of affected individuals and a 99-fold increased risk has been reported in monozygotic twins.

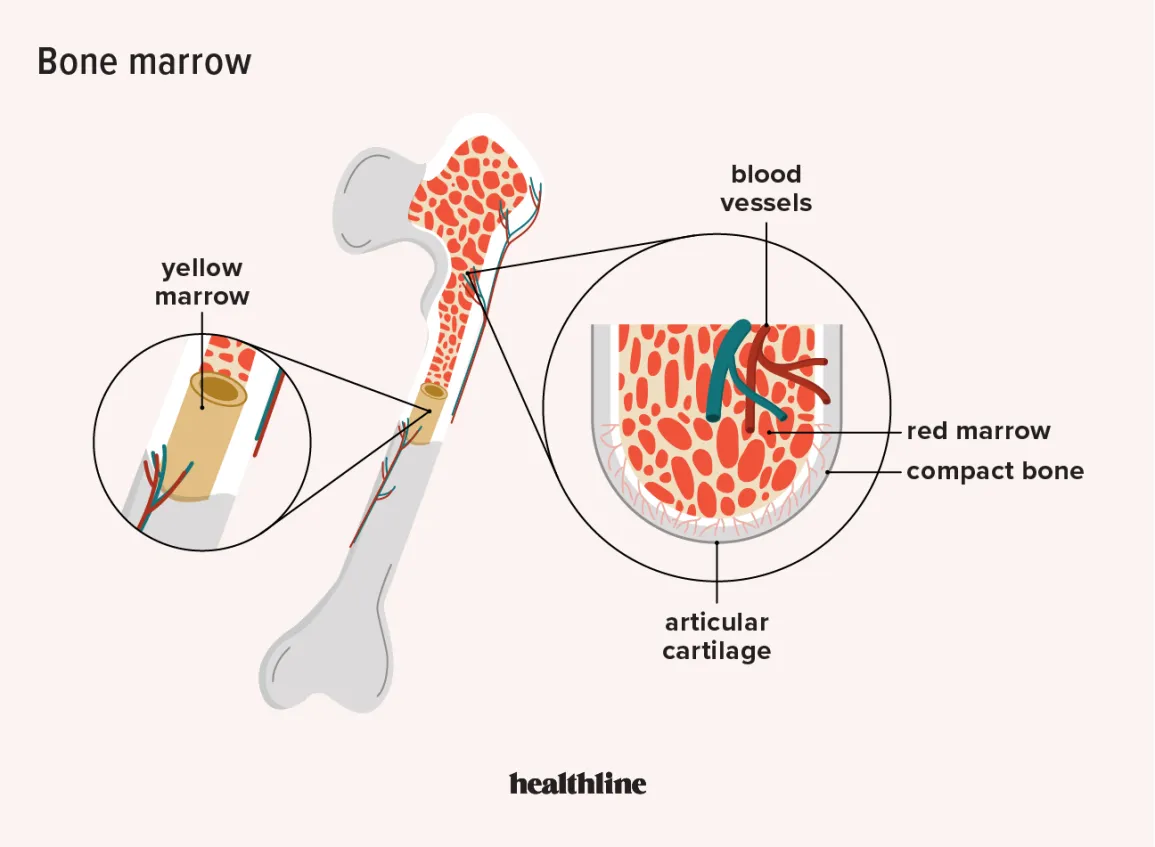
HL incidence is increased in the immuno suppressed, particularly patients with HIV and organ transplant recipients. Certain autoimmune conditions, such as rheumatoid arthritis, will increase the risk of developing HL and immunosuppressive therapy may further increase risk. There is an association between HL incidence and socioeconomic indicators of affluence in childhood, such as small family size and high standard of maternal education. In addition, late exposure to a common infectious agent may be responsible. An increased risk of HL after a diagnosis of infectious mononucleosis has been reported. However, Epstein-Barr virus antigens are identified in a minority of HL biopsies.

**Pathophysiology**

Hodgkin lymphoma results from the clonal transformation of cells of B-cell origin, giving rise to pathognomic binucleated Reed-Sternberg cells.

The cause is unknown, but genetic susceptibility and environmental associations (eg, occupation, such as woodworking; history of treatment with phenytoin, radiation therapy, or chemotherapy; infection with Epstein-Barr virus, Mycobacterium tuberculosis, herpesvirus type 6, HIV) play a role. Risk is slightly increased in people with certain types of immunosuppression (eg, posttransplant patients taking immunosuppressants); in people with congenital immune deficiency disorders (eg, ataxia-telangiectasia, Klinefelter syndrome, Chédiak-Higashi syndrome, Wiskott-Aldrich syndrome); and in people with certain autoimmune disorders (rheumatoid arthritis, celiac sprue, Sjögren syndrome, systemic lupus erythematosis).

Most patients also develop a slowly progressive defect in cell-mediated immunity (T-cell function) that, in advanced disease, contributes to common bacterial and unusual fungal, viral, and protozoal infections. Humoral immunity (antibody production) is depressed in advanced disease. Death often results from infection.

**Figure 3:** Reed Sternberg Cells Source: *https://www.msdmanuals.com/professional/hematology-and oncology/lymphomas/Hodgkin-lymphoma*

**Causes**

Doctors aren't sure what causes Hodgkin's lymphoma. But it begins when an infection-fighting cell called a lymphocyte develops a genetic mutation. The mutation tells the cell to multiply rapidly, causing many diseased cells that continue multiplying.

The mutation causes a large number of oversized, abnormal lymphocytes to accumulate in the lymphatic system, where they crowd out healthy cells and cause the signs and symptoms of Hodgkin's lymphoma.

Various types of Hodgkin's lymphoma exist. Your diagnosis is based on the types of cells involved in your disease and their behavior. The type of lymphoma you are diagnosed with determines your treatment options.

**Symptoms and Signs**

Most patients with Hodgkin lymphoma present with painless cervical or axillary adenopathy. Although the mechanism is unclear, pain rarely may occur in diseased areas immediately after drinking alcoholic beverages, thereby providing an early indication of the diagnosis.

Other manifestations develop as the disease spreads through the reticuloendothelial system, generally to contiguous sites. Intense pruritus refractory to usual therapies may occur early. Constitutional symptoms include fever, night sweats, and loss of appetite resulting in unintentional weight loss (> 10% of body weight in previous 6 mo), which may signify involvement of internal lymph nodes (mediastinal or retroperitoneal), viscera (liver), or bone marrow. Splenomegaly is often present; hepatomegaly is unusual. Pel-Ebstein fever (a few days of high fever regularly alternating with a few days to several weeks of normal or below-normal temperature) occasionally occurs. Cachexia is common as disease advances. Bone involvement is often asymptomatic but may produce vertebral osteoblastic lesions (ivory vertebrae) and, rarely, pain with osteolytic lesions and compression fractures. Intracranial, gastric, and cutaneous lesions are rare and when present suggest HIV-associated Hodgkin lymphoma.

Local compression by tumor masses often causes symptoms, including

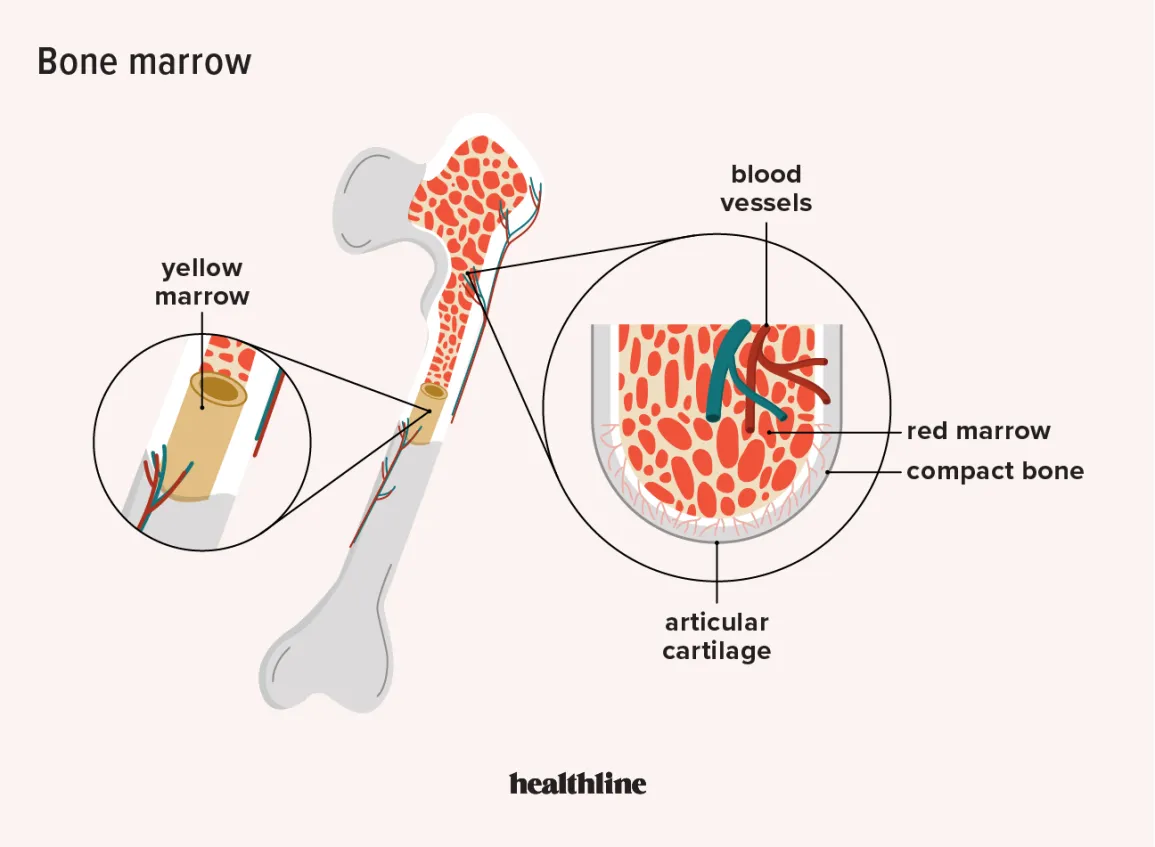
• Jaundice secondary to intrahepatic or extrahepatic bile duct obstruction

• Leg edema (lymphedema) secondary to lymphatic obstruction in the pelvis or groin

• Severe dyspnea and wheezing secondary to tracheobronchial compression due to mediastinal disease

• Lung cavitation or abscess secondary to infiltration of lung parenchyma, which may simulate lobar consolidation or bronchopneumonia

Epidural invasion that compresses the spinal cord may result in paraplegia. Horner syndrome and laryngeal paralysis may result when enlarged lymph nodes compress the cervical sympathetic and recurrent laryngeal nerves. Neuralgic pain follows nerve root compression.

**Figure 4:** Lymph nodes, such as these lymph nodes in the neck (inset), are located throughout your body. The inset shows three swollen lymph nodes below the lower jaw.

Source: [*https://www.mayoclinic.org/diseases-conditions/hodgkins-lymphoma/symptoms-causes/syc-20352646*](https://www.mayoclinic.org/diseases-conditions/hodgkins-lymphoma/symptoms-causes/syc-20352646)

**Risk factors**

Anything that increases your chance of getting Hodgkin’s lymphoma is a risk factor. Although Hodgkin’s lymphoma usually develops in people who have no risk factors, the following things may mean you are more likely to develop it:

• **Age:** Hodgkin’s lymphoma is most common in young adults (15 to 40 years) and older adults (over 55 years old).

• **Gender:** Males are slightly more likely to develop Hodgkin’s lymphoma.

• **Viruses**: The risk is small, but some viruses may make you more likely to get Hodgkin’s lymphoma. These include:

o Epstein-Barr virus (EBV)

o Infectious mononucleosis (mono)

o Human immunodeficiency virus (HIV)

o Human T-cell lymphocytotropic virus (HTLV)

• Family history: If you have a parent, brother or sister with Hodgkin’s lymphoma, you have an increased risk of developing the disease.

Not everyone with risk factors gets Hodgkin’s lymphoma. However, if you have risk factors, you should discuss them with your doctor.

**Types of Hodgkin lymphoma**

Different types of Hodgkin lymphoma can grow and spread differently and may be treated differently.

**Classic Hodgkin lymphoma**

Classic Hodgkin lymphoma (cHL) accounts for more than 9 in 10 cases of Hodgkin lymphoma in developed countries. The cancer cells in cHL are called Reed-Sternberg cells. These cells are usually an abnormal type of B lymphocyte. Enlarged lymph nodes in people with cHL usually have a small number of Reed-Sternberg cells with a lot of normal immune cells around them. These other immune cells cause most of the swelling in the lymph nodes.

**Classic HL has 4 subtypes:**

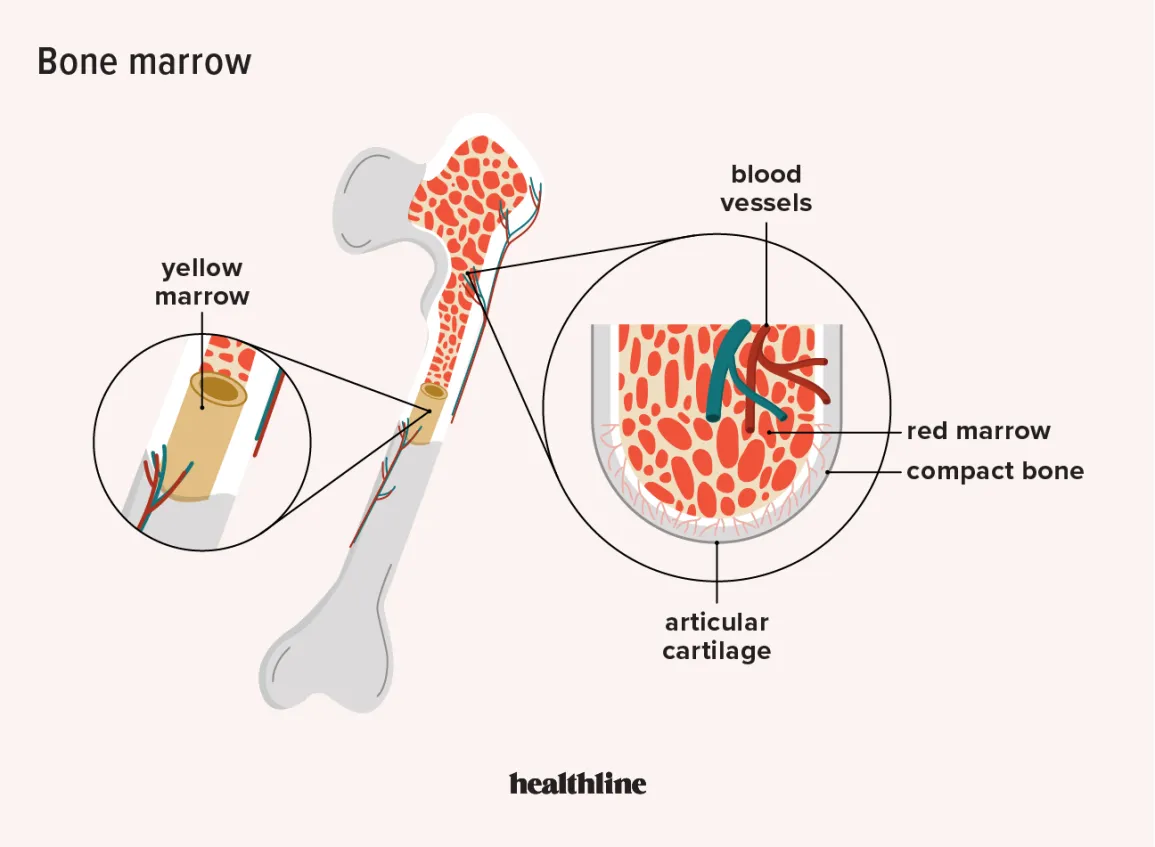
• **Nodular sclerosis Hodgkin lymphoma or NSCHL:** This is the most common type of Hodgkin disease in developed countries. It accounts for about 7 out of 10 cases. It's most common in teens and young adults, but it can occur in people of any age. It tends to start in lymph nodes in the neck or chest.

• **Mixed cellularity Hodgkin lymphoma or MCCHL:** This is the second most common type, found in about 4 out 10 cases. It's seen mostly in people with HIV infection. It's also found in children or the elderly . It can start in any lymph node but most often occurs in the upper half of the body.

• **Lymphocyte-rich Hodgkin lymphoma:** This sub-type isn't common. It usually occurs in the upper half of the body and is rarely found in more than a few lymph nodes.

• **Lymphocyte-depleted Hodgkin lymphoma:** This is a rare form of Hodgkin disease. It's seen mainly in older people and those with HIV infection. It's more aggressive than other types of HL and likely to be advanced when first found. It's most often in lymph nodes in the abdomen (belly) as well as in the spleen, liver, and bone marrow.

**Table 1:** Histopathologic Subtypes of Hodgkin Lymphoma (WHO Classification) Source: [*https://www.msdmanuals.com/professional/hematology-and-oncology/lymphomas/hodgkin-lymphoma*](https://www.msdmanuals.com/professional/hematology-and-oncology/lymphomas/hodgkin-lymphoma)

**Nodular lymphocyte-predominant Hodgkin lymphoma**

Nodular lymphocyte-predominant Hodgkin lymphoma (NLPHL) accounts for about 5% of cases. The cancer cells in NLPHL are large cells called popcorn cells (because they look like popcorn), which are variants of Reed-Sternberg cells. You may also hear these cells called lymphocytic and histiocytic (L&H) cells.

NLPHL usually starts in lymph nodes in the neck and under the arm. It can occur in people of any age, and is more common in men than in women. This type of HL tends to grow more slowly and is treated differently from the classic types.

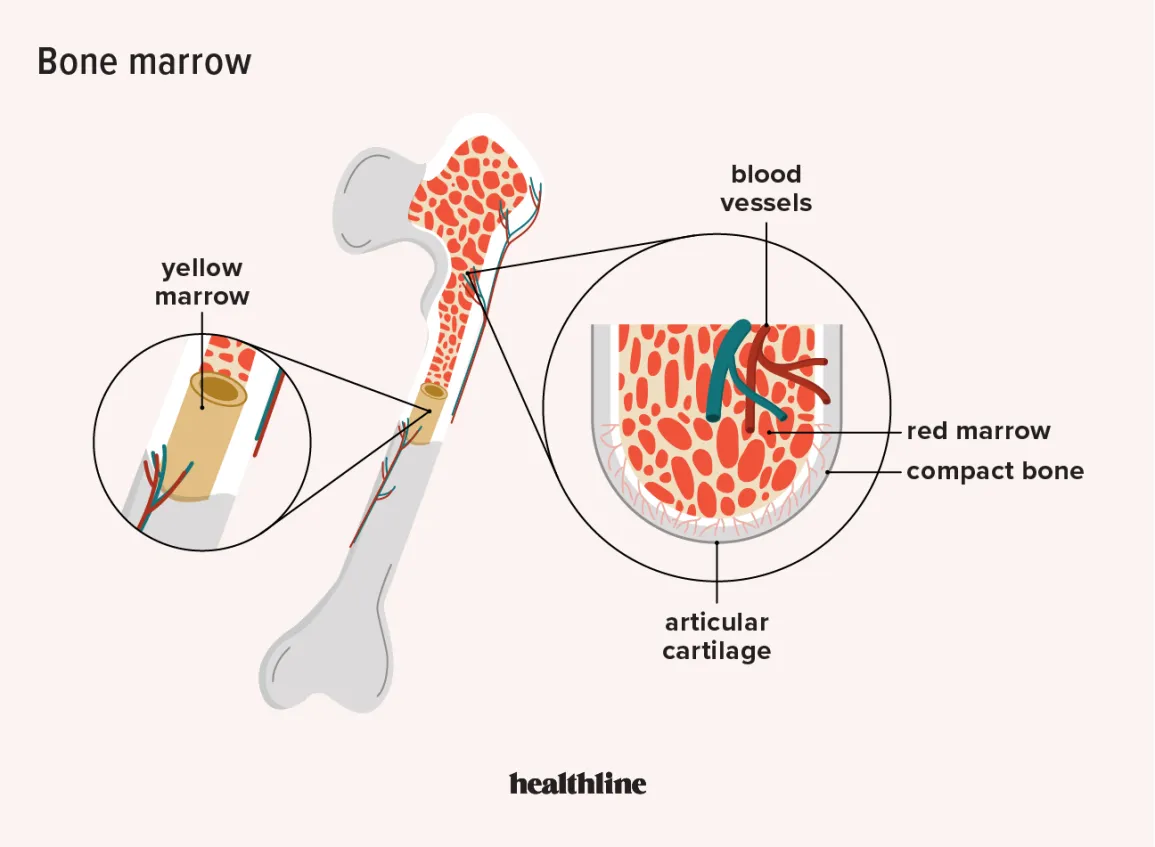
**Diagnosis**

After asking you about your personal and family medical history a doctor may then have you undergo tests and procedures used to diagnose Hodgkin's lymphoma, including:

• **A physical exam** Your doctor checks for swollen lymph nodes, including in your neck, underarm and groin, as well as a swollen spleen or liver.

• **Blood tests** A sample of your blood is examined in a lab to see if anything in your blood indicates the possibility of cancer. CBC with differential, erythrocyte sedimentation rate (ESR), LDH, and kidney and liver function tests are generally done. Test results may be abnormal but are nondiagnostic. CBC may show slight polymorphonuclear leukocytosis. Lymphocytopenia may occur early and is an adverse prognostic factor. Eosinophilia is present in about 20% of patients, and thrombocytosis may be present. Anemia, often microcytic, usually develops with advanced disease. In advanced anemia, defective iron reutilization is characterized by low serum iron, low iron-binding capacity, an elevated serum ferritin, and increased bone marrow iron. Pancytopenia is occasionally caused by bone marrow invasion, usually by the lymphocyte-depleted type. Hypersplenism may occur in patients with marked splenomegaly. Elevated serum alkaline phosphatase levels may be present, but elevations do not always indicate bone marrow or liver involvement. Increases in leukocyte alkaline phosphatase, serum haptoglobin, and other acute-phase reactants usually reflect the presence of inflammatory cytokines from active Hodgkin lymphoma.

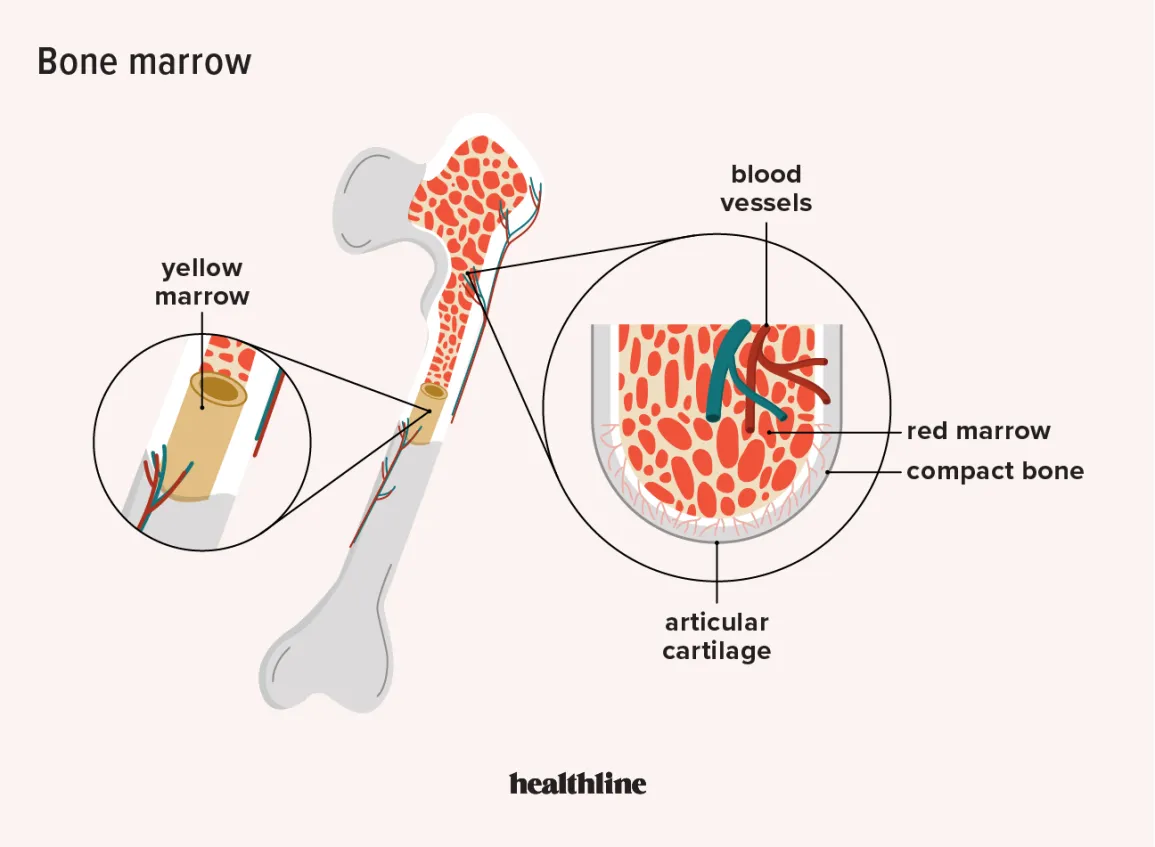
• **Imaging tests** Your doctor may recommend imaging tests to look for signs of Hodgkin's lymphoma in other areas of your body. Tests may include X-ray, CT and positron emission tomography. Chest x-ray or physical exam abnormalities should be confirmed with CT or PET scan of the chest in order to choose the most efficient biopsy procedure. If only mediastinal nodes are enlarged, mediastinoscopy, video-assisted thoroscopy (VATS), or a Chamberlain procedure (a limited left anterior thoracostomy allowing biopsy of mediastinal lymph nodes inaccessible by cervical mediastinoscopy) may be indicated. CT-guided core needle biopsy may also be considered; fine-needle aspiration is often inadequate for the diagnosis of Hodgkin lymphoma.

Figure 5: CT-PET scan of bilateral ailary and mediastinal lymphadenopathy

Source: https://www.gponline.com/haematology-hodgkins-lymphoma/neurology/article/1064779

• **Removing a lymph node for testing** Your doctor may recommend a lymph node biopsy procedure to remove a lymph node for laboratory testing. He or she will diagnose classical Hodgkin's lymphoma if abnormal cells called Reed-Sternberg cells are found within the lymph node.

• **Removing a sample of bone marrow for testing** A bone marrow biopsy and aspiration procedure involves inserting a needle into your hipbone to remove a sample of bone marrow. The sample is analyzed to look for Hodgkin's lymphoma cells.

**Figure 6:** In a bone marrow aspiration and biopsy, a doctor or nurse uses a thin needle to remove a small amount of liquid bone marrow, usually from a spot in the back of your hipbone (pelvis). The second part of the procedure removes a small piece of bone tissue and the enclosed marrow.

Source: <https://www.mayoclinic.org/diseases-conditions/hodgkins-lymphoma/diagnosis-treatment/drc-20352650>

**Staging Hodgkin's lymphoma After**

your doctor has determined the extent of your Hodgkin's lymphoma, your cancer will be assigned a stage. Knowing your cancer's stage helps your doctor determine your prognosis and treatment options. Stages of Hodgkin's lymphoma include:

• **Stage I** The cancer is limited to one lymph node region or a single organ.

• **Stage II** In this stage, the cancer is in two lymph node regions or the cancer has invaded one organ and the nearby lymph nodes. But the cancer is still limited to a section of the body either above or below the diaphragm. 14

• **Stage III** When the cancer moves to lymph nodes both above and below the diaphragm, it's considered stage III. Cancer may also be in one portion of tissue or an organ near the lymph node groups or in the spleen.

• **Stage IV** This is the most advanced stage of Hodgkin's lymphoma. Cancer cells are in several portions of one or more organs and tissues. Stage IV Hodgkin's lymphoma affects not only the lymph nodes but also other parts of the body, such as the liver, lungs or bones.

Additionally, your doctor uses the letters A and B to indicate whether you're experiencing symptoms of Hodgkin's lymphoma:

• **A** means that you don't have any significant symptoms as a result of the cancer.

• **B** indicates that you may have significant signs and symptoms, such as a persistent fever, unintended weight loss or severe night sweats.

Many types of Hodgkin's lymphoma exist, including rare forms that are difficult for inexperienced pathologists to identify. Accurate diagnosis and staging are key to developing a treatment plan. Research shows that review of biopsy tests by pathologists who aren't experienced with lymphoma results in a significant proportion of misdiagnoses. Get a second opinion from a specialist if needed.

**Prognosis**

In classic Hodgkin lymphoma, disease-free survival 5 yr after therapy is considered a cure. Relapse is very rare after 5 yr. Chemotherapy with or without radiation therapy achieves cure in 70 to 80% of patients. Increased potential for relapse depends on many factors, including male sex, age > 45 yr, advanced stage, and signs of tumor-induced inflammation (low albumin, anemia, leukocytosis, and lymphopenia). Patients who do not achieve complete remission or who relapse within 12 mo have a poor prognosis.

**Treatment**

Which Hodgkin's lymphoma treatments are right for you depends on the type and stage of your disease, your overall health, and your preferences. The goal of treatment is to destroy as many cancer cells as possible and bring the disease into remission. The choice of treatment modality is complex and depends on the precise stage of disease. Before treatment and when applicable, men should be offered sperm banking, and women should discuss options to preserve fertility with their oncologists and a fertility specialist. Options include hormonal therapy to take the ovaries out of cycle and oocyte or embryo cryopreservation prior to chemotherapy.

**Chemotherapy**

Chemotherapy is a drug treatment that uses chemicals to kill lymphoma cells. Chemotherapy drugs travel through your bloodstream and can reach nearly all areas of your body. Chemotherapy is often combined with radiation therapy in people with early-stage classical type Hodgkin's lymphoma. Radiation therapy is typically done after chemotherapy. In advanced Hodgkin's lymphoma, chemotherapy may be used alone or combined with radiation therapy.

Chemotherapy drugs can be taken in pill form or through a vein in your arm, or sometimes both methods of administration are used. Several combinations of chemotherapy drugs are used to treat Hodgkin's lymphoma.

Stage IA, IIA, IB, or IIB disease is generally treated with an abbreviated chemotherapy regimen of doxorubicin (Adriamycin, bleomycin, vinblastine, and dacarbazine (ABVD) plus radiation therapy or with longer-course chemotherapy alone. Such treatment cures about 80% of patients. In patients with bulky mediastinal disease, chemotherapy may be of longer duration or of a different type, and radiation therapy is typically used. Stage IIIA and IIIB disease is usually treated with ABVD combination chemotherapy alone. Cure rates of 75 to 80% have been achieved in patients with stage IIIA disease, and rates from 70 to 80% in patients with stage IIIB disease.

For stage IVA and IVB disease, ABVD combination chemotherapy is the standard regimen, producing complete remission in 70 to 80% of patients; > 50% remain disease-free at 5 yr. Other effective drugs include nitrosoureas, ifosfamide, procarbazine, cisplatin orcarboplatin, and etoposide. Other drug combinations are bleomycin, etoposide, doxorubicin (Adriamycin), cyclophosphamide,vincristine (Oncovin), procarbazine, and prednisone (known as BEACOPP); and melchlorethamine, doxorubicin, vinblastine,vincristine, etoposide, bleomycin, and prednisone (known as Stanford V). Side effects of chemotherapy depend on the drugs you're given. Common side effects are nausea and hair loss. Serious long-term complications can occur, such as heart damage, lung damage, fertility problems and other cancers, such as leukemia.

**Radiation therapy**

Radiation therapy uses high-energy beams, such as X-rays and protons, to kill cancer cells. For classical Hodgkin's lymphoma, radiation therapy is often used after chemotherapy. People with early-stage nodular lymphocyte-predominant Hodgkin's lymphoma may undergo radiation therapy alone.

During radiation therapy, you lie on a table and a large machine moves around you, directing the energy beams to specific points on your body. Radiation can be aimed at affected lymph nodes and the nearby area of nodes where the disease might progress. The length of radiation treatment varies, depending on the stage of the disease.

A typical treatment plan might have you going to the hospital or clinic five days a week for several weeks. At each visit, you undergo a 30-minute radiation treatment. Radiation therapy can cause skin redness and hair loss at the site where the radiation is aimed. Many people experience fatigue during radiation therapy. More-serious risks include heart disease, stroke, thyroid problems, infertility and other cancers, such as breast or lung cancer.

**Bone marrow transplant**

Bone marrow transplant, also known as stem cell transplant, is a treatment to replace your diseased bone marrow with healthy stem cells that help you grow new bone marrow. A bone marrow transplant may be an option if Hodgkin's lymphoma returns despite treatment.

During a bone marrow transplant, your own blood stem cells are removed, frozen and stored for later use. Next you receive high-dose chemotherapy and radiation therapy to destroy cancerous cells in your body. Finally your stem cells are thawed and injected into your body through your veins. The stem cells help build healthy bone marrow.

People who undergo bone marrow transplant may be at increased risk of infection.

**Other drug therapy**

Other drugs used to treat Hodgkin's lymphoma include targeted drugs that focus on specific vulnerabilities in your cancer cells and immunotherapy that works to activate your own immune system to kill the lymphoma cells. If other treatments haven't helped or if your Hodgkin's lymphoma returns, your lymphoma cells may be analyzed in a laboratory to look for genetic mutations. Your doctor may recommend treatment with a drug that targets the particular mutations present in your lymphoma cells.

Targeted therapy is an active area of cancer research. New targeted therapy drugs are being studied in clinical trials.

**Alternative medicine**

No alternative medicines have been found to treat Hodgkin's lymphoma. But alternative medicine may help you cope with the stress of a cancer diagnosis and the side effects of cancer treatment. Talk with your doctor about your options, such as:

• Art therapy

• Exercise

• Meditation

• Music therapy

• Relaxation exercises

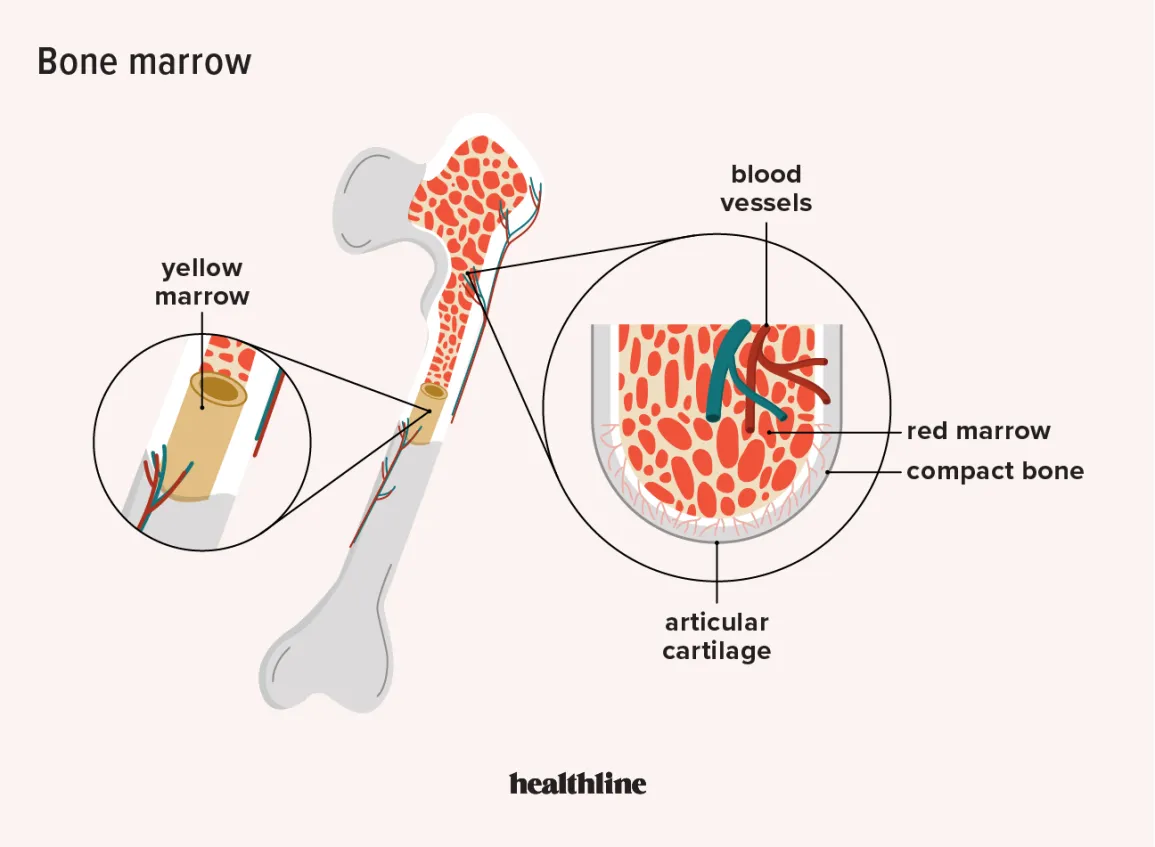
• Spirituality

**Complications of treatment**

Chemotherapy, particularly with drugs such as the alkylating agents (mechlorethamine, cyclophosphamide, procarbazine),vincristine, and etoposide, increase the risk of leukemia between years 3 and 10 post-therapy. Both chemotherapy and radiation therapy increase the risk of malignant solid tumors (eg, breast, GI, lung, soft tissue). Mediastinal radiation increases the risk of coronary atherosclerosis and valvular heart disease. Breast cancer risk is increased in women beginning about 7 yr after they have received radiation treatment to adjacent nodal regions.

**Post treatment surveillance**

All patients who are not PET-negative at the end of induction therapy should have biopsy; if residual disease is present, additional treatment is necessary. Once in remission, patients should be followed for signs and symptoms of relapse for 5 yr. Those with manifestations of relapse should have imaging with PET/CT or CT alone. Routine, scheduled imaging in asymptomatic patients is no longer considered mandatory, although it is reasonable to do PET/CT at 1 and 2 years post-therapy even in patients without symptoms.

Table 2: Hodgkin Lymphoma Post treatment Surveillance

Source: [*https://www.msdmanuals.com/professional/hematology-and-oncology/lymphomas/hodgkin-lymphoma*](https://www.msdmanuals.com/professional/hematology-and-oncology/lymphomas/hodgkin-lymphoma)

**Coping and support**

A Hodgkin's lymphoma diagnosis can be extremely challenging. The following strategies and resources may help you deal with cancer:

• **Learn about Hodgkin's lymphoma.** Learn enough about your cancer to feel comfortable making decisions about your treatment and care. In addition to talking with your doctor, look for information in your local library and on the internet. Start your information search with the Lymphoma Research Foundation and the Leukemia & Lymphoma Society.

•**Maintain a strong support system.** Having a support system and a positive attitude can help you cope with any issues, pain and anxieties that might occur. Although friends and family can be your best allies, they sometimes may have trouble dealing with your illness. If so, the concern and understanding of a formal support group or others coping with cancer can be especially helpful.

• **Set reasonable goals.** Having goals helps you feel in control and can give you a sense of purpose. But avoid setting goals you can't possibly reach. You may not be able to work a 40- hour week, for example, but you may be able to work at least part time. In fact, many people find that continuing to work can be helpful.

• **Take time for yourself.** Eating well, relaxing and getting enough rest can help combat the stress and fatigue of cancer. Also, plan for the downtimes when you may need to rest more or limit what you do.

• **Stay active.** Receiving a diagnosis of cancer doesn't mean you have to stop doing the things you enjoy or normally do. For the most part, if you feel well enough to do something, go ahead and do it. It's important to stay active and involved as much as you can.