Printed May 5, 2015 from http://www.cancer.net/cancer-types/lymphoma-hodgkin-childhood/diagnosis

Lymphoma - Hodgkin - Childhood - Diagnosis [1]

This section has been reviewed and approved by the Cancer.Net Editorial Board [2], 08/2014

ON THIS PAGE: You will find a list of the common tests, procedures, and scans that doctors can use to find out what?s wrong and identify the cause of the problem. To see other pages, use the menu on the side of your screen.

Doctors use many tests to diagnose cancer and find out if it has spread to another part of the body, called metastasis. Some tests may also determine which treatments may be the most effective. For most types of cancer, a biopsy is the only way to make a definitive diagnosis of cancer. Imaging tests may be used to find out whether the cancer has spread. This list describes options for diagnosing this type of cancer, and not all tests listed will be used for every person. Your child?s doctor may consider these factors when choosing a diagnostic test:

- Age and medical condition
- Type of cancer suspected
- Signs and symptoms
- Previous test results

In addition to a physical examination, the following tests may be used to diagnose Hodgkin lymphoma:

Physical examination/blood tests. Children tend to have larger lymph nodes than adults. Usually, a child has enlarged lymph nodes for several weeks or months before a doctor suspects Hodgkin lymphoma, which is uncommon in children. The doctor first looks for signs of a more common infection that may cause the lymph nodes to swell and may prescribe antibiotics.

If swelling in the lymph nodes does not go down after a course of antibiotics, the swelling may be caused by something other than an infection. In these instances, the doctor does a physical examination of all the lymph node areas, the liver, and the spleen, which may be enlarged in children with Hodgkin lymphoma.

Blood tests [3] may also be done to check blood counts and evaluate how the liver and kidneys are working. There is no specific blood test for Hodgkin lymphoma, but changes in blood counts, such as unexplained anemia or a low number of red blood cells, are sometimes more common in children with Hodgkin lymphoma.

Biopsy. [4] If the lymph nodes do not feel normal when the doctor examines them and do not respond to antibiotics, the doctor will check tissue from the abnormal lymph node for cancer cells. Hodgkin lymphoma makes a distinctive kind of abnormal cell, called a Reed-Sternberg cell, which is easily identified under the microscope. The only way to diagnose Hodgkin lymphoma is to look at the tissue from an abnormal lymph node under the microscope, which is done by a pathologist. A pathologist is a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease. The process of removing the tissue for examination is called a biopsy.

To perform a standard biopsy for Hodgkin lymphoma, a surgeon cuts through the skin and removes an entire lymph node or a piece of a mass of lymph nodes. In children, a lymph node biopsy is usually performed with general anesthesia or conscious sedation, in which the child is awake but the pain and discomfort are lessened with medication.

Sometimes, a doctor may first try to obtain tissue from the lymph node by doing a fine needle aspiration biopsy. In this test, a thin needle is used to remove small amounts of fluid and tissue from the lymph node. This type of biopsy may not provide enough tissue to diagnose the disease, so it is recommended only when a standard, surgical biopsy may be too difficult or dangerous to perform.

If a biopsy confirms the diagnosis of Hodgkin lymphoma, several tests and scans can help the doctor learn more about the disease and, through a process called staging [5], show how far the disease has spread. The tests and scans, which can also indicate how well treatment is working, may include:

X-ray. An x-ray is a way to create a picture of the structures inside of the body using a small amount of radiation. For instance, a chest x-ray will show whether lymph nodes in the mediastinum are enlarged. A mediastinal tumor that takes up one-third or more of the chest cavity is considered "bulky." It may cause coughing or breathing problems by narrowing the airway.

Computed tomography (CT) scan [6]**.** A CT scan creates a three-dimensional picture of the inside of the body with an x-ray machine. A computer then combines these images into a detailed, cross-sectional picture that shows any abnormalities or tumors. A CT scan can also be used to measure the tumor?s size. A special dye called a contrast medium is given before the scan to provide better detail on the image. The dye can be injected into a patient?s vein or given as a pill to swallow. The CT scan shows if lymph nodes in the chest or abdomen are enlarged, which may be a sign of cancer. Also, this test will show if other organs?such as the lungs, liver, or spleen?are involved.

Magnetic resonance imaging (MRI) [7]**.** An MRI uses magnetic fields, not x-rays, to produce detailed images of the body. MRI can also be used to measure the tumor?s size. A special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient?s vein or given as a pill to swallow. This test may be used instead of or in addition to a CT scan at diagnosis or during follow-up care to check for lymphoma in the abdomen, bones, or lymph nodes in the chest.

Positron emission tomography (PET) scan. [8] A PET scan is a way to create pictures of organs and tissues inside the body. A small amount of a radioactive sugar substance is injected into the patient?s body. This sugar substance is taken up by cells that use the most energy. Because cancer tends to use energy actively, it absorbs more of the radioactive substance. A scanner then detects this substance to produce images of the inside of the body.

PET scans are often used to add to the information gathered from a CT scan and physical examination. This test can also be used to evaluate how well treatment is working. Before treatment, areas of active Hodgkin lymphoma appear bright on the scan in most people. During and after treatment, these bright areas usually go away as the cancer cells are dying. This test can reassure families and doctors?without doing a biopsy?that scar tissue still present on a CT scan after treatment does not contain active cancer cells.

Bone marrow biopsy [9]**.** Hodgkin lymphoma rarely spreads to the bone marrow in children with localized Hodgkin lymphoma located only in the lymphatic system. Bone marrow has both a solid and liquid part. A bone marrow biopsy is the removal of a small amount of solid tissue using a needle. The samples are then analyzed by a pathologist. This biopsy is recommended for children with signs of more widespread disease involving lymph glands above and below the diaphragm. It is also recommended for children with other signs of Hodgkin lymphoma that has spread outside the lymph node system to the lungs, liver, or bones, who are more likely to have lymphoma in the bone marrow.

For a bone marrow biopsy, the child?s skin is numbed with medication, or, more commonly, conscious sedation is given while a needle is inserted into the bone in the hip until it reaches the spongy part of the bone at the center, the bone marrow. A small amount of marrow is removed and examined under a microscope.

After diagnostic tests are done, your child?s doctor will review all of the results with you. If the diagnosis is cancer, these results also help the doctor describe the cancer; this is called staging.

The next section helps explain the different stages for this type of cancer. Use the menu on the side of your screen to select Stages, or you can select another section, to continue reading this guide.

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