

Non-Hodgkin lymphoma (NHL) is one of the most commonly occurring hematologic cancers among adults.¹ The disease originates in a part of the body's immune system known as the lymphatic system, which includes lymph nodes and lymphoid tissues, such as the spleen or bone marrow.^{2,3} In NHL, malignant white blood cells grow uncontrollably, interfering with the body's production of healthy blood cells and ability to fight off infections and other diseases.³

Types of NHL

- There are more than 25 different types of NHL,⁴ which can be classified depending on the type of white blood cell in which the cancer begins B-cell (approximately 85 percent) or T-cell.²
- NHL can also be grouped according to the rate at which it grows:
 - Indolent (or slow growing), the most common of which is follicular (FL) NHL.
 - Aggressive (or rapidly progressing), the most common of which is diffuse large B-cell lymphoma (DLBCL).^{5,6}

Facts and Figures

- Worldwide, NHL represents the 10th most commonly diagnosed cancer, and ranks seventh among developed countries.⁷ The highest incidence rates of NHL occur in the United States and Europe.⁸
- There has been a dramatic rise in the incidence of NHL worldwide during the past few decades, surpassed only by malignant melanoma and lung cancer in women.⁸
 - Research is still ongoing to determine the cause of NHL as well as this increase in incidence.⁸
- In 2008, there were approximately 355,900 new cases of NHL worldwide, and approximately 191,400 related deaths.⁹
- Survival rates for NHL vary widely, depending on the type of NHL, stage, age of the patient, and other variables.¹⁰ The five-year survival rate for NHL patients in the United States is approximately 68 percent.¹¹ In the United States it is estimated that in 2012 approximately 70,130 people will be diagnosed NHL and 18,940 will die.²

Risk Factors^{2,12}

- Most cases of NHL occur in patients who are 60 years of age or older.
- NHL occurs more frequently in men than in women.
- Exposure to chemicals such as benzene and herbicides has been linked to an increased risk of NHL.
- People with a weakened immune system and certain infections, such as HIV, are also at an increased risk for NHL.

Symptoms and Diagnosis

- Currently, there is no known screening test for NHL,² and many symptoms mirror those experienced during an infection or other health problems.¹³
- The most frequent symptoms of NHL may include swollen, painless lymph nodes, unexplained weight loss, fever, night sweats, coughing, trouble breathing or chest pain, chronic weakness and pain or swelling of the abdomen.¹²
- While a physical exam, imaging test such as a CT scan, or blood test may help determine whether or not NHL is the likely cause of symptoms, a biopsy is the only definitive way to diagnose lymphoma.⁶
 - A biopsy can be done by removing part of or an entire lymph node.^{2,6}

Treatment

- Treatment of NHL is dependent upon the type of disease, stage, whether it is indolent or aggressive, the patient's age, and whether other health problems are present.²
- Treatment options may include chemotherapy, biological therapy, immunotherapy or radiation therapy.² Recent studies have shown that B-cell directed antibodies are playing an increasing role in the management of NHL.¹⁴
- Stem cell transplantation is another option for NHL patients, and is more likely to be recommended in patients who experience a relapse after initial treatment.¹⁵ For some patients transplantation may not be an option, because of either older age or medical complications.^{16,17}
- Indolent lymphomas, such as follicular lymphoma, show a high level of relapse, as treatment with chemotherapy alone has not yet resulted in an improvement in overall survival (OS).¹⁸
- In aggressive disease, standard of care treatment achieves long-term remission in less than half of NHL cases, demonstrating an unmet need for both newly diagnosed and relapsed patients.¹⁹

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- ³ National Cancer Institute. What is Non-Hodgkin Lymphoma? Available at: <http://www.cancer.gov/cancertopics/wyntk/non-hodgkin-lymphoma/page2>. Accessed April 24, 2012.
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- ¹³ National Cancer Institute. What you need to know about Non-Hodgkin Lymphoma: Symptoms. Available at: <http://www.cancer.gov/cancertopics/wyntk/non-hodgkin-lymphoma/page4>. Accessed April 24, 2012.
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- ¹⁶ University of Michigan Health System. Allogeneic Stem Cell Transplant. Available at: <http://www.uofmhealth.org/health-library/tv7978>. Accessed April 24, 2012.
- ¹⁷ Leukemia and Lymphoma Society. Non-Hodgkin Lymphoma. Available at: <http://www.lls.org/#/diseaseinformation/lymphoma/nonhodgkinlymphoma/treatment/stemcelltransplantation/>. Accessed April 24, 2012.
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