

## Lymphoma - Non-Hodgkin - Risk Factors [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 11/2014

**ON THIS PAGE:** You will find out more about the factors that increase the chance of developing lymphoma. To see other pages, use the menu on the side of your screen.

A risk factor is anything that increases a person's chance of developing cancer. Although risk factors often influence the development of cancer, most do not directly cause cancer. Some people with several risk factors never develop cancer, while others with no known risk factors do. However, knowing your risk factors and talking about them with your doctor may help you make more informed lifestyle and health care choices.

The exact cause of NHL is not known, and for most people the lymphoma has no known cause. However, the following factors may raise a person's risk of developing NHL:

**Age.** The risk of NHL increases with age. The most common types occur most often in people in their 60s and 70s.

**Gender.** Men are more likely to develop NHL than women.

**Bacterial infections.** Some types of NHL are associated with specific infections. For example, MALT lymphoma of the stomach is thought to be caused by an infection with bacteria called *Helicobacter pylori*. If this lymphoma is diagnosed very early, it will sometimes go away if the infection is cured with antibiotics. Other types of MALT lymphoma, including those affecting the lungs, tear glands, and skin, may also be caused by infections.

**Viruses.** Viruses cause some types of NHL. For example, as explained in the [Subtypes](#) [3] section, Epstein-Barr virus (EBV, which is the virus that causes mononucleosis, also known as "mono") is associated with some types of NHL, including Burkitt lymphoma and lymphomas occurring after an organ transplant. EBV may also cause some types of NHL in people between 60 and 90 years old. However, the virus is probably not the only factor, so people who have had mono do not necessarily have an increased risk of developing NHL in the future. In addition, hepatitis C infection has been associated with an increased risk of marginal zone lymphomas of the spleen (see [Subtypes](#) [3]). Other viruses have also been found to be important in causing other, rare types of lymphoma.

**Immune deficiency disorders.** Immune system disorders, such as [HIV/AIDS](#) [4], increase the

risk of NHL, especially the aggressive B-cell lymphomas.

**Autoimmune disorders.** People with autoimmune disorders, such as rheumatoid arthritis and Sjögren syndrome, have an increased risk of developing certain types of NHL. Also, some drugs used to treat autoimmune disorders may increase the risk of NHL.

**Organ transplantation.** Organ transplant recipients have a higher risk of NHL because of the drugs that must be taken to lower immune system function to protect the transplanted organ.

**Previous cancer treatment. Previous treatment with certain drugs** for other types of cancer may increase the risk of NHL.

**Chemical exposure.** Exposure to certain chemicals, such as pesticides and petrochemicals, may increase the risk of NHL.

**Genetic factors.** Early studies have found several genetic changes that may be associated with a small number of lymphoma cases. Currently there are no broadly accepted genetic tests to identify inherited risk factors for NHL or that reliably predict an individual's risk of developing NHL.

**Vaccines.** A number of studies have found an association between Bacille Calmette?Guerin (BCG) vaccination and an increased risk of NHL; however, results have varied. Other vaccinations, such as those for smallpox, cholera, yellow fever, influenza, measles, tetanus, and polio, have been associated with a decreased risk of NHL. Overall, the relationship between vaccinations and lymphoma remains unclear and controversial.

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**Links:**

[1] <http://www.cancer.net/cancer-types/lymphoma-non-hodgkin/risk-factors>

[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/19210>

[4] <http://www.cancer.net/node/31289>