Hodgkin Lymphoma Causes, Risk Factors, and Prevention

Risk Factors

A risk factor is anything that affects your chance of getting a disease such as cancer. Learn more about the risk factors for Hodgkin lymphoma.

- Hodgkin Lymphoma Risk Factors
- What Causes Hodgkin Lymphoma?

Prevention

There is no way to completely prevent cancer. But there are things you can do that might lower your risk. Learn more.

- Can Hodgkin Lymphoma Be Prevented?

Hodgkin Lymphoma Risk Factors

A risk factor is anything that affects your chance of getting a disease such as cancer. Different cancers have different risk factors. Some cancer risk factors, like smoking, can be changed. Others, like a person's age or family history, can't be changed.

A few risk factors make a person more likely to develop Hodgkin lymphoma (although it’s not always clear why these factors increase risk). But having a risk factor, or even several, does not mean that you will definitely get the disease. And many people who get the disease may have few or no known risk factors.

Epstein-Barr virus infection/mononucleosis
People who have had infectious mononucleosis (sometimes called mono for short), an infection caused by the Epstein-Barr virus (EBV), have an increased risk of Hodgkin lymphoma. Although the risk is higher than for people who have not had mono, the overall risk is still very small.

The exact role of EBV in the development of Hodgkin lymphoma is not clear. Many people are infected with EBV, but very few develop Hodgkin lymphoma. Parts of the virus are found in Reed-Sternberg cells in about 1 out of 3 people with Hodgkin lymphoma. But most people with Hodgkin lymphoma have no signs of EBV in their cancer cells.

**Age**

People can be diagnosed with Hodgkin lymphoma at any age, but it is most common in early adulthood (especially in a person’s 20s) and in late adulthood (after age 55).

**Gender**

Hodgkin lymphoma occurs slightly more often in males than in females.

**Geography**

Hodgkin lymphoma is most common in the United States, Canada, and Europe, and is least common in African and Asian countries.

**Family history**

Brothers and sisters of young people with this disease have a higher risk for Hodgkin lymphoma. The risk is very high for an identical twin of a person with Hodgkin lymphoma. But a family link is still uncommon – most people with Hodgkin lymphoma do not have a family history of it.

It’s not clear why family history might increase risk. It might be because family members have similar childhood exposures to certain infections (such as Epstein-Barr virus), because they share inherited gene changes that make them more likely to get Hodgkin lymphoma, or some combination of these factors.

**Socioeconomic status**

The risk of Hodgkin disease is greater in people with a higher socioeconomic
background. The reason for this is not clear. One theory is that children from more affluent families might be exposed to some type of infection (such as Epstein-Barr virus) later in life than children from less affluent families, which might somehow increase their risk.

**HIV infection**

The risk of Hodgkin disease is increased in people infected with HIV, the virus that causes AIDS.

- **References**
  


**What Causes Hodgkin Lymphoma?**

Scientists have found some risk factors that make a person more likely to get Hodgkin disease, but it's not always clear exactly how these factors might increase risk.

For example, some researchers think that infection with the Epstein-Barr virus may sometimes cause DNA changes in B lymphocytes, leading to the development of Reed-Sternberg cells, which are the cancer cells in Hodgkin lymphoma.
DNA is the chemical in our cells that makes up our genes, which control how our cells function. We look like our parents because they are the source of our DNA. But DNA affects more than just how we look.

Some genes control when cells grow, divide into new cells, and die:

- Genes that help cells grow, divide, and stay alive are called **oncogenes**.
- Genes that slow down cell division or cause cells to die at the right time are called **tumor suppressor genes**.

Cancers can be caused by DNA changes that turn on oncogenes or turn off tumor suppressor genes.

Scientists have found many gene changes in Reed-Sternberg cells that help the cells grow and divide or live longer than they should. Reed-Sternberg cells also make substances called **cytokines**, which attract many other cells into the lymph node, enlarging it. In turn, these non-cancerous cells release substances that further help Reed-Sternberg cells grow.

Despite these advances, scientists do not yet know what sets off these processes. An abnormal reaction to infection with EBV or to other infections may be the trigger in some cases. But more research is needed to understand what causes Hodgkin lymphoma.

American Cancer Society medical information is copyrighted material. For reprint requests, please see our [Content Usage Policy](#).

**References**


Can Hodgkin Lymphoma Be Prevented?

Few of the known risk factors for Hodgkin lymphoma can be changed, so it is not possible to prevent most cases of the disease at this time.

Infection with HIV, the virus that causes AIDS, is known to increase risk, so one way to limit your risk is to avoid known risk factors for HIV, such as intravenous drug use or unprotected sex with many partners. You can read more about HIV infection in HIV, AIDS, and Cancer.

Another risk factor for Hodgkin lymphoma is infection with the Epstein-Barr virus (the cause of infectious mononucleosis, or mono), but there is no known way to prevent this infection.

References

