

What Causes Cancer? Understanding Risk Factors

It is usually not possible to know exactly why one person gets cancer and another doesn't. But research has found risk factors that can raise a person's chances of developing cancer. Some, like tobacco or sunlight, can be limited; others, like age and family history, cannot.

This page is for anyone wondering what causes cancer. It explains what a risk factor is, how scientists find them, and which ones are most studied.

The simple version

This page explains what is known about why cancer happens. It is for anyone wondering what may have raised their risk, or a loved one's.

It is usually not possible to know exactly why one person gets cancer and another does not. But research has shown that certain risk factors may raise a person's chances.

Some factors are linked to a lower risk of cancer. These are sometimes called protective risk factors, or just protective factors.

A risk factor raises the odds of cancer. It is not the same as a cause, and it does not mean cancer is certain.

What counts as a risk factor

Cancer risk factors include contact with chemicals or other substances. They include certain behaviors. And they include things people cannot control, like age and family history.

A family history of certain cancers can be a sign of an inherited cancer syndrome. The National Cancer Institute has information on those syndromes. It covers inherited genetic changes that can cause cancer.

How scientists find risk factors

It helps to know where this list of risk factors comes from. Most risk factors, and most protective factors, turn up first in epidemiology studies. Scientists look at large groups of people. They compare those who get cancer with those who do not. A study may find that people who get cancer behave differently, or have met different substances, than people who do not.

Such studies on their own cannot prove that a behavior or substance causes cancer. A finding could come down to chance. Or the real risk factor could be something other than the one being studied. Findings like these sometimes reach the news. That can spread wrong ideas about how cancer starts and spreads.

Scientists grow more confident about a link when two things are true:

- Many studies point to a similar link between a possible risk factor and higher cancer risk.
- There is a believable mechanism, a way the factor could actually cause cancer.

The most-studied risk factors

The list below holds the most-studied known or suspected risk factors for cancer.

Habits and exposures

- **Alcohol**
- **Cancer-causing substances**
- **Diet**
- **Infectious agents**
- **Radiation**
- **Sunlight**
- **Tobacco**

Body and health factors

- **Age**
- **Chronic inflammation**
- **Hormones**
- **Immunosuppression** (a weakened immune system)
- **Obesity**

The National Cancer Institute has a separate, detailed page for each one.

Risk factors you can and can't change

Some risk factors can be avoided or reduced. Others cannot. Growing older, for example, is one nobody can change.

The key point is balance. Having a risk factor does not mean a person will get cancer. And having none of the known ones is no guarantee either. Still, limiting contact with the avoidable ones is one way to lower the risk of certain cancers.

Source: National Cancer Institute (cancer.gov/about-cancer/causes-prevention/risk)

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