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## **Understanding Cancer Risk [1]**

**This section has been reviewed and approved by the [Cancer.Net Editorial Board \[2\]](#), 11/2015**

Risk is the probability that an event will happen. When talking about cancer, risk is most often used to describe the chance that a person will develop cancer. Or, it is used to describe the chance that the cancer will come back or recur. Knowing risk information can help you make more informed decisions about your health.

Understanding cancer risk also helps researchers and oncologists improve the health of many other people. For example, when scientists discovered that smoking increases the risk of lung cancer, it jumpstarted a worldwide anti-smoking campaign.

### **Understanding risk factors**

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. This information could also help your doctor decide if you need genetic testing and/or counseling (see below).

General risk factors for cancer include:

- Older age
- A personal and/or family history of cancer

- Using [tobacco](#) [3]
- Some types of viral infections, such as [human papillomavirus \(HPV\)](#) [4]
- Specific chemicals
- Exposure to radiation, including ultraviolet radiation from sunlight

Some risk factors like using tobacco, being overweight, and getting multiple sunburns can be avoided. Other risk factors cannot be avoided, such as getting older. You can learn about the risk factors for [specific types of cancer](#) [5] in Cancer.Net's cancer type section.

## **Risk factors and cancer screening**

Understanding your risk for cancer can help your doctor decide whether you could benefit from:

- Receiving a cancer screening test, such as a [mammogram](#) [6] or [colonoscopy](#) [7]
- Receiving a screening test at an earlier age and/or more often than the general population
- Having another intervention, such as surgery or medication, to lower your cancer risk

For example, a woman whose mother or sister had breast cancer is at least twice as likely to develop breast cancer as a similar woman who does not have the same family history. Some women with especially strong family histories of breast cancer or women with gene mutations linked to cancer may consider a preventive breast removal. This type of surgery appears to reduce the risk of developing breast cancer by at least 95%. Women with high risk of developing breast cancer may also [take a medication](#) [8] to lower her risk of breast cancer.

People with a known [genetic syndrome](#) [9] in the family or people with a significant family history of cancer may consider [genetic testing](#) [10]. Your doctor or [genetic counselor](#) [11] can help you learn more about specific genetic tests and provide you with more information on your risk of developing cancer based on your family history and other risk factors.

## **Understanding the difference between absolute and relative risk**

Relative risk and absolute risk help doctors understand whether an individual's risk is higher or lower than the general population's.

- **Absolute risk** is the chance that a person will develop a disease during a given time. This statistic helps determine how many people are at risk for a disease. For example, the statement “1 out of 8 women (12.5%) will develop breast cancer in her lifetime” describes the absolute risk for the general population of women. However, this number only relates to the general population and cannot identify the risk for a specific person or group of people. For example, women older than 70 have a higher absolute risk of breast cancer than younger women because breast cancer risk increases with age.
- **Relative risk** compares the risk between a group of people who have a particular risk factor and those who don't. For example, imagine you are comparing two similar groups of 100 people. Both groups will include people who are the same age, gender, etc. But only one of the groups will include people who have a particular risk factor. During a specific time, researchers keep track of how many people from each group develop cancer. If 2 people in the risk factor group and 1 person in the non-risk factor group develop cancer, those in the first group have 2 times the risk of the second group. This is a 100% increase in relative risk. The absolute risk, however, would be 2% or two out of 100 people.

Risk measurements can also be helpful when making decisions about lifestyle changes or [cancer screening](#) [12]. A risk factor increasing a person's relative risk of developing cancer by 100% might sound high. But looking at the absolute risk (1 person in 100 compared to 2 people in 100) provides a more complete picture. When applying studies you hear in the news to your own situation, make sure you find the absolute risk. Most studies report relative risks, which can make something sound more important or scary than it actually is.

## Questions to ask the doctor about risk

The statistical language doctors use may be difficult to understand at first. So ask a member of your health care team to explain what this information means in your situation. Consider bringing up the following questions with your doctor:

- What risk factors do I have, and how do they affect my risk of cancer?
- What is my chance of developing cancer in the next five years? In my lifetime?
- What can I do to lower my risk of cancer?
- If I change my behavior to eliminate a risk factor (for example, quit smoking or lose weight), what are my chances of developing cancer in the next five years? In my lifetime?

- If I identify a new risk factor (for example, if a close relative develops cancer), how much does the risk increase?
- What cancer screening tests do you recommend, and how often should I have them?

## More Information

[Understanding Statistics Used to Estimate Risk and Recommend Screening](#) [13]

[Medical News: How to Know If It's Accurate](#) [14]

## Additional Resource

National Cancer Institute: [Risk Factors for Cancer](#) [15]

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### Links

[1] <http://www.cancer.net/navigating-cancer-care/prevention-and-healthy-living/understanding-cancer-risk>

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

[3] <http://www.cancer.net/node/25002>

[4] <http://www.cancer.net/node/24561>

[5] <http://www.cancer.net/cancer-types>

[6] <http://www.cancer.net/node/24584>

[7] <http://www.cancer.net/node/24481>

[8] <http://www.cancer.net/node/29926>

[9] <http://www.cancer.net/node/24905>

[10] <http://www.cancer.net/node/24895>

[11] <http://www.cancer.net/node/24907>

[12] <http://www.cancer.net/node/24972>

[13] <http://www.cancer.net/node/24960>

[14] <http://www.cancer.net/node/24593>

[15] <http://www.cancer.gov/about-cancer/causes-prevention/risk>