

Second Cancers

What are second cancers?

A second cancer is a different type of cancer from your original cancer that is diagnosed after you have completed treatment for your original cancer. Second cancers happen in approximately 1 - 3% of survivors. Even though the risk of developing a second cancer is very small, it's still a topic of concern for many survivors.

Improvements in treatment for cancer mean that a greater number of cancer survivors are living longer. This also means that a greater number of cancer survivors are at risk for a second cancer. Health care professionals are learning more about the causes of second cancers. Researchers continue to study second cancers in survivors and hope to develop better treatment methods that put cancer survivors at less risk for developing second cancers.

If you are worried about second cancers, there are things you can do to minimize your risks of developing a second cancer. It is also important to know the symptoms of cancer and have regular check-ups with your health care team. These can help relieve some of your anxieties and help detect symptoms if you do develop a second cancer.

Who is at risk for second cancers?

There isn't a lot of specific information about how likely it is that survivors of different cancer types will have second cancers. Current research shows that cancer survivors in general have twice the chance of developing second cancers compared to people of the same age and sex who have not had cancer. This means that it's even more important for cancer survivors to be aware of the risk factors for second cancers, know the symptoms of cancer and go to follow-up care appointments for cancer screening.

Whether or not you will have a second cancer depends on many different things. There are certain risk factors that may make you more likely to experience a second cancer. Every cancer survivor experiences cancer and its treatment in different ways, so even if you find you are at a higher risk for a second cancer, it doesn't mean that you will have one.

Some of the risks for developing second cancers are:

- **Type of cancer:** The type of original cancer you had may affect your risk for a second cancer, because some cancers require treatments of high doses of chemotherapy or radiation. It is not yet clear to researchers if the second cancer is caused by the treatment or by the original cancer.
- **Age at diagnosis:** Younger survivors may physically handle cancer treatments better than older survivors. Usually, their bodies can regain strength more quickly after treatment ends. This may make them less likely to develop a second cancer. However, younger survivors also have more at-risk years for second cancers - the

longer you survive your original cancer, the longer you need to watch for symptoms of a second cancer.

- **Type of chemotherapy:** High doses of chemotherapy medicines are associated with a small number of second cancers in some survivors.

Examples of types of chemotherapy that may make you more likely to have a second cancer:

- Procarbazine
- Chlorambucil
- BCNU (bischloroethylnitrosourea)
- Nitrogen mustard
- Cyclophosphamide
- Ifosfamide

- **Type of radiation:** The higher the dose of radiation you received, the more at risk you might be for developing a second cancer. The risk of having a second cancer from radiation is very low and depends on the amount of radiation given during treatment.
- **Family history:** When cancer runs in the family, survivors have a higher chance of developing second cancers than survivors who do not have a family history of cancer.
- **Lifestyle:** Smoking, excessive alcohol use and poor diet are some of the unhealthy behaviors that might put you at risk for second cancers. This is the only known risk factor for a second cancer that you can personally avoid by choosing to change some of the behaviors that put you at risk.

Sometimes second cancers happen in survivors who aren't affected by any of the risk factors mentioned above. No matter what you do to prevent a second cancer, you must also take precautions to detect second cancers early.

All of these risk factors can be very confusing and overwhelming. You may be asking yourself, "But what are my risk factors for a second cancer?" If you want to know your risk factors for a second cancer based on your cancer, treatment and medical history, ask a member of your health care team to discuss your risks with you.

What are some symptoms of second cancers?

Sometimes you can't prevent second cancers from happening. Knowing the general symptoms of cancer will help you detect a second cancer early. The earlier a second cancer is diagnosed, the more likely it can be successfully treated.

Some symptoms of cancer are:

- Changes in bowel or bladder habits
- A sore that does not heal
- Unusual bleeding or discharge
- Thickening or lump in the breast or other parts of your body
- Indigestion or difficulty swallowing
- Noticeable change in a wart or mole
- Nagging cough or hoarseness
- Fatigue
- Bone pain
- Changes in vision
- Constant or severe headaches

There are many symptoms of cancer; the symptoms above are just a short list. And just because you experience these symptoms does not always mean that you have cancer. However, you should discuss symptoms of cancer with a member of your health care team right away. With some cancers, you may not even notice symptoms.

You might wonder what you can do to detect second cancers early when you don't notice symptoms. Regular check-ups with your health care team, which may include x-rays, CT scans, PET scans or blood work, can help you detect second cancers early. Open communication with your health care team may help them recognize symptoms that are not easy for you to see on your own. Also, communicating with your doctor about possible symptoms or concerns you have about second cancers may help relieve some of the anxiety you might be having about getting another kind of cancer.

Why does treatment for cancer sometimes cause second cancers?

No one knows exactly why survivors who have been treated for cancer develop a second cancer. This can be very frustrating for you and members of your health care team. There are some theories about why cancer and its treatment sometimes cause second cancers. Feel free to discuss these further with your health care team if you are curious about what causes second cancers.

Some research suggests that chemotherapy and/or radiation weakens the immune system and makes it easier for second cancers to develop in survivors.

Sometimes chemotherapy used to treat the original cancer may cause the bone marrow to make abnormal cells. This can lead to second cancers in some survivors.

Radiation also destroys cancer cells and may cause damage to healthy cells. This damage sometimes causes second cancers.

These theories do not mean that you shouldn't have been treated with chemotherapy or radiation for your original cancer. Your health care team's primary responsibility is to treat your cancer the best way they can, and, unfortunately, cancer treatment can have long-term effects. Research is currently being done to create treatment options for survivors that decrease the risk for long-term effects like second cancers and help improve the quality of life of survivors.

Some treatment-related second cancers were caused by treatments that are no longer given today. New treatments for cancer use less toxic medicine than was used years ago. These new treatments will likely cause a decrease in the number of survivors who develop second cancers.

When do second cancers usually occur?

A second cancer may appear at any time during your survivorship. Some studies show that a common time for second cancers to develop is several years after completion of cancer treatment - usually around five to nine years after treatment. However, because the exact causes of second cancers aren't known, it's difficult to predict when they might appear. This makes it even more important for cancer survivors to know the symptoms of cancer and continue to go back for cancer screenings, even years after they have finished treatment for their original cancer.

What can be done to minimize the risk of second cancers?

Below is a brief list. For more information, see Suggestions.

- Try to find balance with a healthy lifestyle
- Know if your family has a history of cancer
- Know your treatment history (type of cancer, type of chemotherapy you received and amount and location of radiation).
- Develop a screening exam and check-up schedule with your health care team.
- Do not use tobacco products.
- Work with your health care team to develop an exercise plan.
- Maintain a healthy body weight.
- Eat five to seven fruits and vegetables a day.
- Perform regular breast or testicular self-exams and skin examinations each month.
- Avoid exposure to the sun and use sunscreen, particularly on irradiated skin.

Know if your family has a history of cancer:

If you have a family history of cancers such as breast or colon cancer, you should educate yourself on risk factors and get regular screenings.

Understand your family's history of having had cancer in the past. Usually only an oral history is known. If you do not know about your family history, start asking relatives or friends who know your history.

Resources

American Cancer Society

www.cancer.org

Email: Questions can be submitted in English or Spanish from the "Contact Us" page.

Phone: 1-800-ACS-2345 (1-800-227-2345)
TTY for deaf or hard of hearing callers: 1-866-228-4327
English-speaking information specialists are available 24 hours a day.
Spanish-speaking information specialists are available Monday-Friday, 6:30 a.m. to 7:00 p.m. (CST). You can leave a message in English or Spanish 24 hours a day.

The American Cancer Society Web site contains information about many of the challenges of cancer and survivorship. Information about sexual dysfunction includes possible causes of sexual dysfunction, treatment options and professionals who can provide help. You can search for information by cancer type or by topic. ACS provides a list of support groups in your area, or you can join online groups and message boards. Some information on the Web site is available in Spanish, Chinese and Vietnamese. Information specialists can answer questions 24 hours a day by phone or email.

National Cancer Institute (NCI)

www.cancer.gov

Email: Send an email through the "Need Help?" section of Cancer.gov.

Phone: 1-800-4-CANCER (1-800-422-6237)
TTY for deaf and hard of hearing callers: 1-800-332-8615
English-speaking and Spanish-speaking information specialists answer calls Monday-Friday, 9:00 a.m. to 4:30 p.m. local time.
Immediate online assistance is available (in English only) through *LiveHelp*, an instant messaging system for typing in questions and receiving responses from information specialists. You can access *LiveHelp* from the "Need Help?" section of the Cancer.gov homepage Monday-Friday, 9:00 a.m. to 10:00 p.m. (EST).

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