



# BERRIES AS CANCER PREVENTIVE- a review Article

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**Abstract:** A class of disorders known as cancer is defined by the body's aberrant cells proliferating and dividing out of control. Numerous cancer types exist, each with unique traits and therapeutic approaches. Because of its complexity and seriousness, medical experts must diagnose and treat it with great care. There are more than 200 types of cancer and we can classify cancers according to where they start in the body, such as breast cancer or lung cancer. Globally, women die from cancer most frequently from breast cancer.

Using natural medicine instead of pharmaceuticals, we can treat cancer with plants, vines, and fruits.

We shall now see a bit more review of this paragraph, which has previously been covered in other articles.

**Index Terms:** Cancer, Breast cancer, Antioxidants, Berries.

## INTRODUCTION

Uncontrolled cell division is a result of cancer. Tumors, immune system damage, and other potentially deadly consequences may arise from this. Numerous physiological parts, including the skin, lungs, prostate, and breasts, can be impacted by cancer.

As of January 1, 2016, there were an estimated 15.5 million Trusted Source Americans living with a history of cancer, according to a 2018 American Cancer Society report.

According to estimates, there would be 14,61,427 incident cases of cancer in India in 2022 (about 100.4 incidences per 100,000 people). Cancer is predicted to strike one in nine Indians at some point in their lifetime.

For both men and women, the most common cancer sites were the lung and breast, respectively.

The most common type of childhood cancer (0–14 years old) was lymphoid leukemia (29.2% in boys and 24.2% in girls). According to estimates, there will be a 12.8% increase in cancer cases in 2025 compared to 2020.

Breast cancer poses a serious risk during this time.

Around 70–80% of individuals with early-stage, non-metastatic breast cancer can be cured, making it the most common cancer in women globally.

The disease is becoming more common in areas that had low rates up until recently, yet overall rates range by approximately five times. Estrogens are connected to a large number of recognized risk factors.

This article about fruit, berries, vine, and how it heals cancer will be reviewed.

Large amounts of data point to the potential benefits of berry fruits, which are tiny and have soft flesh, against a variety of malignancies in humans.

Berries are a beautiful fruit that contain a variety of bioactive phytochemicals, such as stilbenoids, lignans, triterpenoids, and polyphenols (flavonoids, proanthocyanidins, ellagitannins, gallotannins, and phenolic acids), which have been linked, at least in part, to protective properties against cancer.

## VARIETIES OF CANCER

### Common Cancer Types

- Bladder Cancer
- Breast Cancer
- Colon and Rectal Cancer
- Endometrial Cancer
- Kidney Cancer
- Leukemia
- Liver Cancer
- Lung Cancer
- Melanoma
- Non-Hodgkin Lymphoma
- Pancreatic Cancer
- Prostate Cancer
- Thyroid Cancer

A body's location can also be used to categorize cancers.

### THE MAIN CANCER TYPES

There are billions of cells in our body. The cells are only visible under a microscope due to their tiny size. Our body's organs and tissues are composed of groups of cells. They are remarkably alike, but differ in certain aspects due to the vastly disparate functions of body organs. For instance, because muscles and nerves perform various functions, their cellular architectures differ.

There are over 200 different varieties of cancer, and they can be categorized into different categories based on the part of the body they originate in, for example, lung or breast cancer.

Additionally, we may categorize cancers based on the kind of cell they originate in. Five primary groupings exist. These are the following:

- **Carcinoma:** this type of cancer starts in the tissues that surround or border internal organs, such as the skin. adenocarcinoma, basal cell carcinoma, squamous cell carcinoma, and transitional cell carcinoma are among the subtypes.
- **Sarcoma:** this malignancy starts in the blood vessels, bone, cartilage, fat, or supportive tissues.
- **Leukemia:** is a type of cancer that affects the white blood cells. It begins in the bone marrow and other organs that produce blood cells.
- **Myeloma and lymphoma:** these tumors start in immune system cells
- Cancers of the brain and spinal cord are referred to as central nervous system cancers.

### BREAST CANCER

One kind of cancer that develops in the breast's cells is called breast cancer. Though it can happen to men as well as women, experience it significantly more frequently. Important details regarding breast cancer include:

- **Danger Factors:**  
Age, family history, hormones, genetics, and other risk factors can all raise the chance of getting breast cancer.
- **Types:** Breast cancer comes in a variety of forms, the most prevalent of which is invasive ductal carcinoma. Invasive lobular carcinoma and its less frequent subtypes are among the other kinds.
- **Symptoms:** These could include skin changes like redness or dimpling, nipple discharge, changes in breast size or shape, or a lump in the breast.
- **Diagnosis:** A variety of techniques, such as mammography, ultrasound, magnetic resonance imaging, and biopsies, are commonly used to diagnose breast cancer.
- **Stages:** From stage 0 (non-invasive) to stage IV (advanced), staging establishes the degree of cancer's dissemination. Treatment decisions are guided in part by the stage.
- **Treatment:** There are many different possibilities for treatment, such as hormone therapy, targeted therapy, radiation therapy, chemotherapy, and surgery. The type and stage of the cancer determines the therapy option.

- Prognosis: Depending on a number of variables, a patient's prognosis for breast cancer might vary greatly. Treatment and early discovery can increase the likelihood of positive results.

Given the state of present therapeutic options, advanced breast cancer with distant organ metastases is deemed incurable.

Breast cancer exhibits heterogeneity at the molecular level; characteristic traits include activation of hormone receptors (progesterone and estrogen receptors), activation of human epidermal growth factor receptor 2 (HER2, encoded by ERBB2), and/or BRCA mutations.

Natural fruits and herbs can prevent this breast cancer without the need of prescription drugs.

### **OXIDANTS GROWN FROM BERRIES:**

- ✓ According to the National Cancer Institute, antioxidants shield cells from damage brought on by dangerous chemicals known as free radicalized individuals.
- ✓ Antioxidants have been shown in several lab tests to either delay or stop the growth of cancer.
- ✓ The healthiest diets, rich in fruits and vegetables, are the best providers of antioxidants.
- ✓ Berries have an unrivaled nutrient profile when it comes to fruits.
- ✓ The American Institute for Cancer Research states that numerous minerals that combat cancer can be found in every variety of berries, such as:
  - Vitamin C
  - Fiber
  - The Algae Acid
  - Vitamin A
  - Vitamin B6

### **WHY ARE BERRIES SO IMPORTANT TO CANCER PREVENTION?**

#### **BLUEBERRIES**

Resveratrol and anthocyanosides, two substances that combat cancer, are abundant in blueberries.

Anthocyanosides, one of the most potent antioxidants, have been demonstrated to have a number of anticancer properties, including the capacity to scavenge free radicals, to activate phase II detoxifying enzymes, and to reduce inflammation and cell proliferation.

Resveratrol, found in red grape skins, offers numerous additional health benefits.

In addition to promoting heart health, resveratrol can stop cancer at every stage of its development.

This is strong in anti-inflammation. It represents one of the most potent sources of antioxidants, in addition to their function as a chemo preventive agent.

Because of these super properties, researchers are only now beginning to examine the potential uses of blueberry extract as a radiation treatment. A lot of people have concluded that this can significantly boost the efficacy of radiation therapy. The blueberry extract gives cancer cells that have been exposed to radiation a higher sensitivity.

Expanding upon this finding, research has also demonstrated that blueberries' antioxidants reduce the abnormal cell proliferation that aids in the advancement of cancer.

#### **STRAWBERRIES**

In addition to being a great source of vitamin C, which has been demonstrated to lower the incidence of esophageal cancer, strawberries are also a strong source of antioxidants and folic acid. A cup of strawberries contains all the vitamin C you need each day.

As a matter of fact, strawberries have more vitamin C than oranges.

#### **RASPBERRIES**

The deep red color of raspberries is derived from flavonoids. Together with fiber, these substances support good health and the prevention of disease. Raspberries and other berries contain ellagic acid, which is being researched for its anti-estrogen qualities. This compound may be particularly helpful in the fight against some types of breast cancer.

#### **CANBERRIES**

While cranberries do contain a little amount of vitamin C, their ability to prevent cancer is primarily due to their bundle of phenolic compounds. These include the relatively rare proanthocyanidins and the widely distributed polyphenols found in most berries.

#### **BLACKBERRIES**

Similar to blueberries, blackberries are rich in anthocyanosides. Blackberries also contain additional phytochemicals, vitamins, and minerals

### **CONCLUSION**

Cancer prevention is the act of taking steps to lessen the risk of developing cancer. Examples of these steps include living a healthy lifestyle, avoiding contact with substances known to cause cancer, and receiving cancer-prevention medications or immunizations. Specific substances that affect multiple bodily factors are typically the cause of cancer; these substances are referred to as carcinogens. Cancer can arise from various sources such as exposure to pollutants, radiation, hazardous substances, poor lifestyle choices, etc. Early detection is crucial for effective treatment of cancer. This review study claims that berries have excellent

antioxidant qualities that help prevent cancer.

## REFERENCES

- [1] Medically reviewed by Yamini Ranchod, Ph.D., Ms. By Rachel Nall, MSN, CRNA\_ Updated on June 9, 2023.
- [2] Kristoffer T Davidson, Ziwen Zhu, Dean Balabanov, Lei Zhao, Mark R Wakefield, Qian Bai, Yujiang Fang Pathology & Oncology Research 24, 733-738, 2018.
- [3] Vy Nguyen, Jessica Tang, Emin Oroudjev, Choong Jae Lee, Cecilia Marasigan, Leslie Wilson, George Ayoub Journal of Medicinal food 13 (2), 278-285, 2010.
- [4] Leukemia group B study (CALGB 8642).  
Mary E Costanza, Donald Berry, I Craig Henderson, Mark J Ratain, Katherine Wu, Charles Shapiro, David Duggan, Jagmohan Kalra, Irving Berkowitz, Alan P Lyss  
Clinical cancer research: an official journal of the American Association for Cancer Research 1 (7), 699-704, 1995.
- [5] B Singh, JA Berry, A Shoher, GD Ayers, C Wei, A LucciOncogene 26 (26), 3789-3796, 2007.
- [6] G Stack, V Kumar, S Green, M Ponglikitmongkol, M Berry, MC Rio, AM Nunez, M Roberts, C Koehl, P Bellocq, B Gairard, R Renaud, P Chambon  
Breast Cancer: Cellular and Molecular Biology, 185-206, 1988.
- [7] Pan Pan, Yi-Wen Huang, Kiyoko Oshima, Martha Yearsley, Jianying Zhang, Jianhua Yu, Mark Arnold, Li-Shu WangJournal of Berry Research 8 (3), 163-175, 2018.
- [8] N Berry, DB Jones, R Marshall, J Smallwood, I TaylorEuropean Surgical Research 20 (4), 225-232, 1988.
- [9] Seema Patel  
Mediterranean Journal of Nutrition and Metabolism 7 (2), 133-143, 2014.
- [10] Luca Mazzoni, Patricia Perez-Lopez, Francesca Giampieri, Jose M Alvarez-Suarez, Massimiliano Gasparri, Tamara Y Forbes-Hernandez, Jose L Quiles, Bruno Mezzetti, Maurizio Battino.  
Journal of the Science of Food and Agriculture 96 (2), 365-371, 2016.

