

# Nutritional Supplementation For Cancer

Posted by: [Dr. Mercola](#)

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**Stephen Byrnes, PhD, RNCP**

Unfortunately, there is no magic supplement regime you can embark on to either prevent or treat cancer. However, there is sufficient evidence that certain nutrients, phytochemicals, fatty acids, hormones, and enzymes can play a major role.

Finding the right combination of nutrients for an individual is a highly personal matter that should employ the advice of a health professional experienced in cancer treatment.

It is important to realize that cancer is a multifaceted illness with a number of potential, but no one certain, causes.

**The watchword with cancer (as with all chronic diseases) is prevention.**

Key preventive measures should include the following:

1. Avoiding exposure to known and potential **carcinogens**, e.g., radiation (including excessive exposure to sunlight), synthetic hormones, chemical dyes and additives, aromatic hydrocarbons, tobacco smoke, etc.;
2. Avoiding **dietary factors** that **weaken the immune system**, promote cellular mutation, and/or increase free radical production, e.g., excessive sugar intake, refined foods, food additives, moldy foods, foods cured with nitrites, margarine, vegetable shortening, refined vegetable oils, foods with high pesticide residues, etc;
3. Avoiding **psychological factors** that could increase stress; Also key in prevention is including in one's life things which serve to protect the body from the above three items -- it is impossible to live a totally "sheltered" life so to speak. Supplements are the easiest of these things to add into one's life as cancer preventives. Some supplements also hold potential as cancer treatments, either directly or as adjuncts to other therapies.

If one is faced with cancer right now and undergoing radiation or chemotherapy treatment, some supplements can be employed to offset the damaging side effects often experienced.

The best supplements for cancer prevention and treatment can be grouped into a few broad categories, those being

- **antioxidants**
- **hormones**
- **fatty acids**
- **enzymes**

Let's take a closer look at these powerful helpers, noting their potential and proven benefits, possible dangers, and their food sources.

### **Antioxidants:**

Antioxidants are a large category of nutritional and chemical substances that **neutralize substances called free radicals**.

Free radicals are the products of oxidative reactions in and out of the body.

They are, essentially, unstable molecules that will do anything to get stable. Because of this, free radicals are highly reactive compounds that will literally "steal" an electron from another molecule to stabilize themselves.

In that process, however, a new free radical is created, namely, the molecule that was "stolen" from. Upon its creation, that new free radical then perpetrates the same "theft" on another nearby molecule, and the cycle begins anew.

Its important to realize that oxidation is a normal part of life and so are free radicals. Oxidation is what enables us to get and use energy from our food and the body utilizes free radicals to detoxify harmful substances from itself, as well as to destroy invading microorganisms.

Since they are so damaging, the body maintains a sophisticated antioxidant system to hold them in check.

However, when the body's prolonged exposure to oxidative factors causes an excessive output of free radicals that exceeds its ability to neutralize them (technically called "oxidative stress"), the body is put in an increasingly vulnerable position due to the accelerated cellular destruction.

This is why it is absolutely critical for you to avoid the cancer-promoting factors listed at the start of this article: they all involve exposure to or stimulate production of free radicals in the body. Here are the principal antioxidant nutrients and phytochemicals.

### **Vitamin A:**

Vitamin A has been studied for its anti-cancer effects for decades. Vitamin A appears to inhibit what is called the "cancer promotion" stage and **works by blocking certain enzymes that promote cancer growth**, by inducing cytotoxicity in cancer cells, and by stimulating the immune system.

Although vitamin A is protective of all cancers, it is especially useful in preventing and treating those of the mucous membranes, e.g., lung cancer. Lung cancer in smokers, for example, is much higher in those with low vitamin A levels.

When the level increases, the incidence of cancer decreases. Increased intake of this fat soluble vitamin appears to have a protective effect against breast, mouth, bladder, colon, blood, and larynx cancers.

Additionally, the body uses vitamin A to initiate the conversion of cholesterol into various stress hormones. Stress, therefore, including the stress of illness, directly depletes levels of this nutrient.

There is no consensus of what constitutes an adequate intake of vitamin A, but foods rich in this nutrient include butter, liver, cream, eggs, all animal fats, and fish oil.

Ironically, it is these very foods that people are told to avoid because of unscientific fears about animal fats. In this author's opinion, one of the causes of our current high cancer rates is the adoption of low-fat diets by the public at the urging of public health authorities.

A low-fat diet is automatically low in vitamin A as this nutrient is only found in animal fats. A teaspoon of cod liver oil each day will supply you with a good amount of vitamin A, as well as vitamin D and omega-3 fatty acids which are also involved in cancer prevention and usually lacking in Western diets.

One can also purchase fish liver oil capsules to insure an adequate daily intake. Avoid all synthetic vitamin A supplements as these are usually derived from coal tar and have been shown to cause birth defects.

### **The Carotenes:**

Carotenes are fat-soluble plant pigments that appear in red, orange, dark green, and yellow fruits and vegetables. One of them, beta-carotene, has been extensively studied and can convert into vitamin A in the body (provided certain factors are present).

Other well-known carotenes are lycopene, alpha-carotene, lutein, canthaxanthin and zeaxanthin.

### **These carotenes inhibit and prevent cervical, oral, lung, prostate, colon, endometrial, and esophageal cancers.**

Beta-carotene primarily works by neutralizing a particular free radical known as a "singlet oxygen species," and by preventing lipid peroxidation, which generates free radicals.

Like vitamin A, beta-carotene also enhances immune function and stimulates the release of natural killer cells (which directly attack tumor cells) and T-lymphocytes. Food sources include sweet potatoes, eggs, apricots, peaches, chard, spirulina, carrots, and tomatoes. Since the carotenes are not toxic, they can be eaten and supplemented without fear and the general rule is that too much is never enough.

### **Vitamin C:**

According to the prestigious Nutrition Desk Reference Vitamin C protects against cancer cell growth by

- **destroying free radicals**
- **increasing collagen synthesis**
- **altering DNA and protein metabolism in precancerous and cancerous cells**
- **preventing the transformation of precancerous cells to cancerous cells**

- **producing cytotoxicity in cancer cells**

Indeed, epidemiological studies of vitamin C and cancer show a significantly protective effect from vitamin C in preventing and treating esophageal, oral, pharyngeal, stomach, lung, cervical, rectal, colon, and pancreatic cancers. Vitamin C blocks the conversion of nitrites, found in processed meats like bacon, into carcinogenic nitrosamines.

Drs. Linus Pauling and Ewan Cameron theorized that vitamin C, by its ability to strengthen the "ground substance" of tissues (by promoting collagen synthesis) and by its ability to stimulate in cells the production of a substance that neutralizes the enzyme hyaluronidase, prevented and treated cancer.

Cancer is not only proliferative, but also invasive. It does this by secreting large amounts of hyaluronidase which dissolves the "cement" of surrounding tissues and leaves them vulnerable to attack by the progressing tumor.

By this dual action of strengthening the collagen of surrounding tissues and by inhibiting the release of the enzyme that directly attacked them, Pauling and Cameron felt justified in recommending large amounts of vitamin C in treating cancer.

Since vitamin C is a non-toxic substance and since it is the one vitamin that the body cannot synthesize, it makes good sense to include vitamin C-rich foods AND supplements in our daily diets.

Pauling recommended 5-8 grams per day for an adult. This amount, however, could induce mild diarrhea in some people. 2-3 grams a day seems a safer amount, with more added if an illness or special need arises.

Like vitamin A, vitamin C is rapidly used up during periods of stress. Vitamin C-rich foods include all berries, cabbage, and most fruits.

### **Vitamin E:**

**Vitamin E helps prevent oxidation of polyunsaturated fatty acids and fat-soluble vitamins in the body and stimulates the immune system to destroy tumorous cells as they are transformed into a cancerous state.**

In its actions, **vitamin E is more for cancer prevention** than for treatment. This nutrient also is key in preventing and treating heart and cardiovascular disease.

The best food source for vitamin E is cold-pressed wheat germ oil, with raw nuts and butter as fair sources. 200-400 IUs per day is a good amount to supplement with. Vitamin E works best in conjunction with our next nutrient, selenium.

### **Selenium:**

**Selenium acts as an antioxidant by activating the enzyme glutathione peroxidase (discussed below).**

People living in areas with selenium-poor soils have higher cancer rates than those living in selenium-rich soil areas.

It is important to use a natural source of selenium when supplementing as the non-organic forms (selenite and selenate) can be toxic at higher amounts. Brewer's yeast, whole grains, oysters, tuna, and butter provide the best sources of this mineral.

If supplementing, 100 mcg. Is a good amount to take, in conjunction with a nutrient-dense diet that supplies selenium from other foods.

### **Glutathione:**

Glutathione (GSH) is a tripeptide formed from the amino acids cysteine, glycine, and glutamic acid. Low levels are always found in cancer patients, as well as those affected by other oxidative stress-induced diseases such as AIDS.

As glutathione levels drop, the person gets sicker.

**This is because white blood cells and the liver use GSH to detoxify poisons inside the body.**

When the level decreases, less toxins are able to be eliminated leading to a build up in the body. This leads to increased white blood cell death (due to the cell poisoning itself) and liver impairment.

Glutathione, therefore, plays a role in cancer prevention and treatment. The best way to increase and maintain one's GSH levels is to include animal foods in one's diet as these contain the amino acids needed by the body to synthesize GSH.

Foods rich in the sulfur amino acids (e.g., eggs) are especially good sources. An excellent food supplement is whey protein, available in powdered form at most health markets.

Whey is an inexpensive and good tasting food supplement that has been shown to increase the body's stores of GSH. Whey also has important value for those cancer patients who are suffering from cachexia, or wasting syndrome, as its proteins are easily assimilated by the body.

The amino acid l-glutamine can also be employed in such cases. Except in cases of kidney disease, l-glutamine is a safe supplement that can help build and maintain muscle mass, as well as help with digestive problems and poor immune function. Suggested amounts range from 5-40 gms. per day.

### **Alpha-Lipoic Acid:**

**This substance helps with free radical control by enhancing the antioxidant functions of vitamins C and E, and glutathione.**

Additionally, ALA helps to recycle glutathione in the liver. Suggested amounts would be 100-300 mg per day.

## Coenzyme Q10:

A substance similar to vitamin E in its functions,

**CoQ10 helps generate energy at the cellular level in the mitochondria.**

CoQ10 also stimulates the immune system and helps get more oxygen to the tissues, something highly desired when dealing with cancer or heart disease. The best food sources for CoQ10 are organ meats such as heart and animal foods like beef.

Supplements are available, but they are expensive. When supplementing, be sure to take CoQ10 with a fatty food or drink as the fat enhances absorption.

## Phytochemicals:

**There are a range of antioxidant compounds found in various plants that play a role in cancer prevention and treatment.**

Herbs such as rosemary, turmeric, green tea, milk thistle, curry, and ginkgo biloba have been well studied for their antioxidant properties. Herbal combination formulas like Padma 28, an ancient Ayurvedic formula, have been studied as well.

Padma 28 has been extensively studied for its good effects on circulation and hepatitis. With cancer, however, research is only just beginning. Of all the phytochemicals, it is green tea that has been the most studied for its anti-cancer effects.

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### Chemotherapy and other Cancer options

To learn more, read this article: [The Man Who Questions Chemotherapy : Dr. Ralph Moss](#) - Dr. Ralph Moss has written the book, ***Questioning Chemotherapy***, which documents the ineffectiveness of chemotherapy in treating most cancers. On November 19, 1977, he was fired for telling the public the truth. At a press conference on November 18th, he and the Second Opinion working group released a well-documented 48-page report that stated the top officials of the Memorial Sloan-Kettering Cancer Center had lied about the results of a study performed at the center regarding "Laetrile" -- (a natural, alternative cancer treatment).

Reference website page: <http://articles.mercola.com/sites/articles/archive/2001/02/28/cancer-supplements.aspx>

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