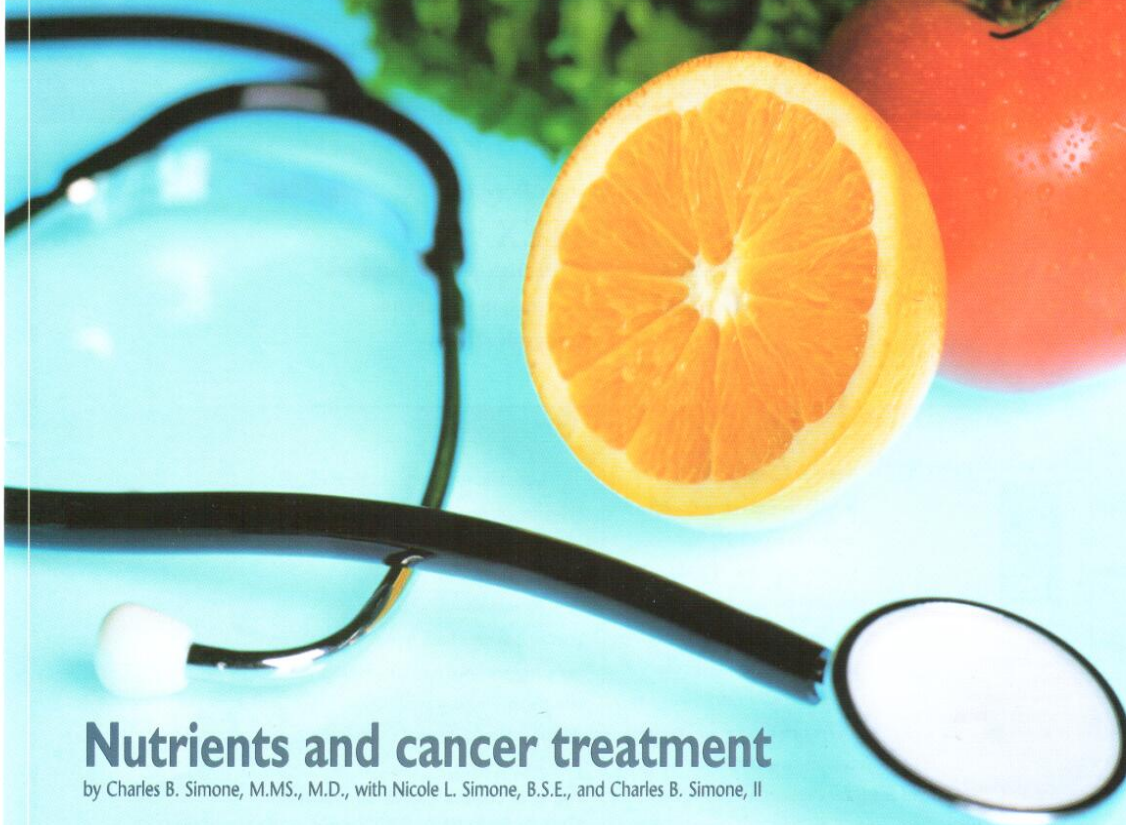


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## Nutrients and cancer treatment

by Charles B. Simone, M.M.S., M.D., with Nicole L. Simone, B.S.E., and Charles B. Simone, II

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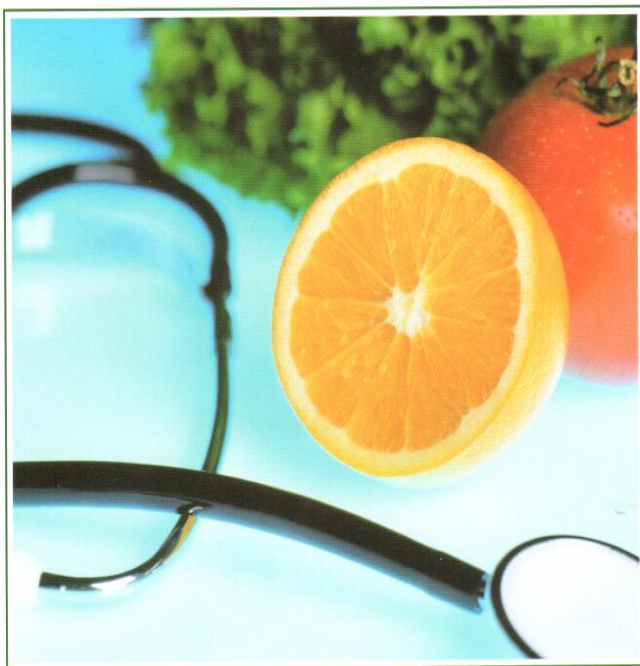


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**PREMIER  
ISSUE!**

# NUTRIENTS AND CANCER TREATMENT

by Charles B. Simone, M.M.S., M.D., with  
Nicole L. Simone, B.S.E. and Charles B. Simone, II



While thoroughly engrossed in basic science at the National Cancer Institute—as a medical oncologist and tumor immunologist—I found new direction as a result of contacts with cancer patients. One of my first patients was a vice president of the United States, who was dying of malnutrition secondary to his cancer—as do 40% of all cancer patients. Later, a man my own age with a rare cancer asked if I would keep him alive until he saw the birth of his child. Intensive chemotherapy cleaned out the cancer, but he failed to improve. As a last resort, I gave him high doses of antioxidants and other vitamins and minerals. They quickly produced a seemingly miraculous, although temporary result. The man saw the birth of his child.

## TODAY'S ONCOLOGY CARE

Despite the enormous effort to combat cancer, the number of new cases of nearly every form of cancer has increased annually over the last century. Over the past several decades, several medical advances in the diagnosis and treatment of cancer have been made: radiation, chemotherapy, immunotherapy with biological response modifiers, CT scans, MR scans, and all the other new medical technology. Despite these advances, from 1930 to the present, life expectancy for almost every form of adult cancer—except cervical, testicular, and lung cancer—have remained constant. This means that there has been no significant progress in cancer treatment.



Although chemotherapy and radiation therapy continue to have a role in cancer treatment, they produce morbidity. Nutritional modification, including the use of antioxidants and other nutrients, and proper lifestyle factors can dramatically decrease morbidity and the side effects of chemotherapy and radiation therapy, as well as increase response rates. Some reports have shown that nutritional and lifestyle modification can actually increase survival. It has been proven that chemotherapeutic agents and radiation therapy reduce the serum levels of certain nutrients, especially antioxidants. The decreased levels of these antioxidants result from lipid peroxidation.

#### AUGMENTING TREATMENT WITH NUTRIENTS

Do vitamins and minerals interfere with chemotherapy and/or radiation therapy? Patients frequently ask me this question because they have been advised not to take supplements during treatment. The scientific literature has clearly addressed this question:

- The early clinical studies were performed at the National Cancer Institute, using an antioxidant called N-acetyl cysteine. This compound was found to protect the heart from the cardiac toxicity of adriamycin, but did not interfere with the tumor-killing capability of the drug. An antioxidant, dexrazoxane (ICRF-187), protects the heart from the effects of adriamycin without affecting its antitumor impact. Cellular studies, animal studies, and human studies demonstrate that vitamins A, E, C, and K, beta-carotene, and selenium, as single agents or in combination, all protect against the toxicity of adriamycin and enhance its cancer-killing effects.

**TABLE 1. THE SIMONE TEN POINT PLAN**

1. **Nutrition.** Maintain an ideal weight—lose five to seven pounds if needed. Follow a low-fat (about 20%), high-fiber (25 gm) diet. Take specific nutrients (see page 24). Eliminate salt, food additives and preservatives, and caffeine.
2. **Tobacco.** Do not smoke, chew snuff, or inhale others' smoke.
3. **Alcohol.** Avoid alcohol.
4. **Radiation.** Avoid unnecessary X-rays and use sunscreens when in the sun. Avoid electromagnetic fields.
5. **Environment.** Keep air, water, and workplace clean.
6. **Hormones/drugs.** Avoid all estrogens and unnecessary drugs.
7. **Know the seven warning signs of cancer.** Lump in breast, non-healing sore, change in wart/mole, change in bowel or bladder habits, persistent cough or hoarseness, indigestion or trouble swallowing, unusual bleeding.
8. **Exercise.**
9. **Stress modification, spirituality, and sexuality.**
10. **Have an executive physical annually.**

- *In vitro* cellular studies and animal studies have used vitamins C, A, K, E, D, B<sub>6</sub>, B<sub>12</sub>, beta-carotene, selenium, or cysteine—as single agents or in combination—given concomitantly with chemotherapy, or tamoxifen, or interferon alpha-2b, or radiation, or combinations of these modalities. They all show the same effect: Increased tumor killing and increased protection of normal tissues.

- Human studies involving over 1,960 patients have been done using single or multiple nutrients in combination with systemic treatment and/or radiation treatment. Results demonstrate that nutrients produce a higher response rate, lower side effects, and even increased survival.

- An increase in survival for cancer patients is uncommon with any allopathic treatment. But an increase in survival has been demonstrated for patients who received vitamin A or other antioxidants in combination with chemotherapy or radiation therapy. This finding was observed for patients with myelodysplastic syndromes, breast cancer, gastric cancer, oral cavity cancer, and upper aerodigestive cancers. Patients who were given beta-carotene and canthaxanthin while undergoing surgery, chemotherapy, and radiation lived longer, with an increase in disease-free intervals. And antioxidant treatment with chemotherapy and radiation prolonged survival for patients with small cell lung cancer, compared with patients who did not receive antioxidants.

- The toxic effects of one chemotherapeutic agent, metho-trexate, can be reversed with folinic acid, which is an analog of folic acid. Folic acid itself does not reverse metho-trexate's effects. In order to reverse the effects of methotrexate, folinic acid has to be given in high doses. Folinic acid cannot be obtained over-the-counter; it is only available by prescription.

#### EFFICACY OF ANTIOXIDANTS

Antioxidants neutralize harmful chemicals, called free radicals, that occur in the body. They are generated by fatty foods, smoking, alcohol, environmental pollutants, toxins, carcinogens, iron, smog, and radiation. Free radicals attack vital cell structures and cause damage, thus contributing to the development of certain diseases (e.g., cancer, cardiovascular disease, arthritis, cataracts).

Antioxidants protect normal cells and other tissues by fighting free radicals and the oxidative reaction that free radicals cause. Antioxidant nutrients include beta-carotene, vitamins C and E, selenium, copper, zinc, bioflavonoids, and cysteine. There are now more than 200 studies that show antioxidants can help decrease the risk of developing cancer.

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One of the most recent investigations took place in Linxian, China. Researchers from the Cancer Institute of the Chinese Academy of Medical Sciences teamed up with researchers at the United States National Cancer Institute. They studied nearly 30,000 adults, randomized over a five-year period into four different groups receiving different nutrients during that period. Here is a brief summary of the study:

ALL INTERVENTION  
STUDIES SHOW THAT BETA-  
CAROTENE AND OTHER  
NUTRIENTS CAN DECREASE  
CANCER RATES AND  
CANCER PROGRESSION.

- It was the first large-scale intervention trial in a prospective randomized fashion to demonstrate that three antioxidant nutrients together—beta-carotene, vitamin E, and selenium—significantly reduced total mortality (9%), especially from all cancers (13%), and particularly stomach cancer (21%).

- These antioxidant nutrients decreased the risk of cancer in humans.

- These antioxidant nutrients substantially reduced the prevalence of cataracts in the oldest patients (aged 65 to 74 years).

- These antioxidant nutrients reduced mortality from stroke.

Many other studies demonstrated similar findings, including the Finland Study, the Switzerland Study, the Hawaiian Study, and studies involving people at high risk for developing endometrial cancer, breast cancer, cervical cancer, small cell lung cancer, oral pharyngeal cancer, and others. Most studies show that protection is conferred to those who consume antioxidants and other nutrients.

#### STUDIES OF PRE-CANCEROUS CONDITIONS

Scores of studies, from all over the world, have shown that antioxidants can decrease the risk of pre-cancerous lesions developing into full-blown cancer.

The Linxian, China, study investigated 3,300 patients with esophageal dysplasia, which is a precursor to esophageal cancer. The same team of researchers from China and the United States examined the results of the

study, which was an intervention study, the best type of clinical design. The group who received the multivitamin/mineral formula daily for six years had:

- Lower mortality from esophageal and upper stomach cancers (8%);
- Lower mortality rate in general (7%);
- Lower rate of death from cancer in any site (4%);

- Lower risk of dying of a stroke (38%).

While the duration of this trial was very short (six years) and the doses of the nutrients were far lower than other trials, the patients who took the supplements had much better results than the control group of patients. Other studies show that people who have colon polyps, abnormal cervical Pap smears, or other pre-cancerous conditions, all do better and can reverse the trend toward cancer if they take certain antioxidants and other nutrients.

But what about beta-carotene specifically? There have been reports from the CARET and ATBC studies that beta-carotene increased the incidence of lung cancer in heavy smokers who drank alcohol and were exposed to asbestos. I want to address this issue with the following thoughts:

- Over 200 studies have demonstrated that beta-carotene is safe and can lower the risk of developing cancer and cardiovascular disease.

- All intervention studies show that beta-carotene and other nutrients can decrease cancer rates and cancer progression.

- A total of 22 epidemiological studies, which included 400,000 smokers and nonsmokers, have shown that those who had a high blood level of beta-carotene had a lower incidence and mortality of lung cancer. None of these studies reported any association with an increased incidence of lung cancer. In fact, the reduction in risk was even more pronounced in smokers than nonsmokers.

- The information that beta-carotene worsens lung cancer patients was never subjected to peer review, which means no scientists have been given the chance to review the information.

TABLE 2. DR. SIMONE'S RECOMMENDED NUTRIENTS/DOSAGES:

• Beta-carotene—20 to 30 mg per day	• Copper—3 to 5 mg per day	• Niacinamide—40 mg per day
• Lutein—10 to 25 mcg per day	• Cysteine—20 to 500 mg per day	• Biotin—150 mcg per day
• Lycopene—10 to 25 mcg per day	• Vitamin A—5,000 to 7,500 IU per day	• Pantothenic acid—20 mg per day
• Vitamin E—400 to 600 IU per day	• Vitamin D—400 to 600 IU per day	• Folic acid—400 mcg per day
• Vitamin C—350 to 6,000 mg per day	• Vitamin B <sub>1</sub> —10 mg per day	• Iodine—150 mcg per day
• Bioflavonoids—10 to 20 mg per day	• Vitamin B <sub>2</sub> —10 mg per day	• Chromium—125 mcg per day
• Selenium—200 to 300 mcg per day	• Vitamin B <sub>6</sub> —10 mg per day	
• Zinc—15 to 20 mg per day	• Vitamin B <sub>12</sub> —18 mcg per day	



- The principal investigator has publicly said that the findings are too preliminary to discuss and the data were not statistically significant.

- The smokers who had high beta-carotene levels at the start of the study had the lowest incidence of lung cancer.

- Most of the study participants were alcoholics, and all of them ate a high-fat diet. Both risk factors dramatically and independently increase the risk of developing lung cancer.

- Beta-carotene did not increase the risk of lung cancer for those who smoked fewer than 20 cigarettes a day and drank little or no alcohol.

- To my knowledge, no information was gathered concerning other lifestyle risk factors that would also contribute to a poor outcome.

- Beta-carotene works most efficiently at the early stages of carcinogenesis, not at the later stages when a cancer is already formed, as was the case with the patients in the CARET and ATBC studies. Cancers start developing 10 and 20 years before symptoms occur or if our technology can detect them.

This safety issue appears to be for (a) large amounts of beta-carotene with alcoholic liver disease, and (b) excessive alcohol consumption and large amounts of beta-carotene without other protective antioxidants or phytochemicals.

The fact remains, beta-carotene:

- Is a potent antioxidant;
- Neutralizes singlet oxygen, a powerfully damaging chemical;
- Enhances immune system function;
- Is very safe and nontoxic.

It is important to rely on the synergism of all the antioxidants, including the carotenoids and B vitamins. Lifestyle changes are also imperative to decrease one's risk of cancer and heart disease. It is foolish to expect that a single nutrient can give the "green light" to continue lifestyle behaviors that will cause disease.

### CONCLUSION

Nutrition and lifestyle factors can profoundly reduce the toxic side effects and improve the results of conventional treatments. In a recent study of 50 patients with early-stage breast cancer, I evaluated the treatment side effects of radiation alone, or radiation combined with chemotherapy, while the patients took therapeutic doses of nutrients. Patients also followed the Simone Ten Point Plan (see Table 1, page 23). The patients were asked to evaluate their own response to the treatment in terms of its impact on their quality of life. The major rationale behind our nutritional plan is that it contains a well-rounded supply of antioxidants and

What is needed is some person, some institution, some inescapable "force" that captures the imagination of our citizens and demonstrates that cancer will be eliminated only when each of us comes to understand that this can only occur as part of a life-long process of sanity, balance, moderation, and self-respect.

Charles B. Simone, M.M.S., M.D.

immune-enhancing nutrients. The results of the study were impressive:

- More than 90% of both groups noted improvement in their physical symptoms, cognitive ability, performance, sexual function, general well-being, and life satisfaction.

- Not one subject in either group reported a worsening of symptoms.

Patients who follow the Ten Point Plan and use certain vitamins and minerals report relatively few side effects from chemotherapy and radiation therapy. Twenty studies with more than 2,700 patients investigated lifestyle modifications that included dietary improvements, nutrient supplementation, and other changes. Results of these studies demonstrated a lower recurrence rate and an increase in survival. The patients in these studies had the following cancers: breast, ovarian, cervical, uterine, head and neck, lung, pancreatic, prostate, and bladder.

Cancer patients should modify their lifestyles using the Ten Point Plan. This includes modifying nutritional factors and taking certain vitamins and minerals, especially if they are receiving chemotherapy and/or radiation (Table 2, page 24). The studies indicate that it is important to take the correct nutrients to reduce side effects, enhance conventional therapies, and increase outcomes.

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**Charles B. Simone, II**, is a freshman at the University of Pennsylvania and an author of five articles for journals such as *The Lancet*. He is recipient of numerous awards, including *USA Today* National High School Academic All-Star Team, and Toyota Community Scholars Regional Scholarship. Nicole and Chuck research and write on important cancer and cancer prevention issues. They also help educate cancer patients and their families about healthy lifestyle modification. Both helped to spearhead the KID START program, designed to teach children, through seminars and health fairs, about healthful lifestyles early in life.