Cancer and Vitamin C

Vitamin C Slows Cancer Down

The BBC recently reported that Vitamin C slows cancer growth. An injection of a high dose of vitamin C may be able to hold back the advance of cancers, US scientists claim. The vitamin may start a destructive chain reaction within the cancer cell. The injection halved the size of tumors, and was reported in the Proceedings of the National Academy of Sciences.

The study authors themselves said that daily, high-dose vitamin C treatment "significantly decreased growth rates" of ovarian, pancreatic, and malignant brain tumors in mice. Such high, cancer-stopping levels of vitamin C can be "readily achieved in humans given ascorbate intravenously."

This then is important, absolutely vital news for millions fighting or fearing cancer.

So what do major cancer organizations have to say? Not much. That is disappointing, but hardly surprising. Both the American Cancer Society and Cancer Research UK have downplayed and flatly ignored decades of physician reports and controlled clinical studies indicating that vitamin C stops cancer. What is worse, each of these supposedly comprehensive cancer research and education organizations continues to actively discourage people from using vitamin C against cancer.

The American Cancer Society's vitamin C webpage specifically states: "Although high does of vitamin C have been suggested as a cancer treatment, the available evidence from clinical trials has not shown any benefit." And Cancer Research UK states that "There is currently no evidence from clinical trials in humans that injecting or consuming vitamin C is an effective way to treat cancer."

Neither of these statement made by these esteemed organisations is true.

As early as 1976, over two decades ago, physicians in Scotland showed that intravenous vitamin C improved quality and length of life in terminal cancer patients. In 2008, Korean doctors reported that intravenous vitamin C "plays a crucial role in the suppression of proliferation of several types of cancer," notably melanoma. In 2006, Canadian doctors reported on the effectiveness of intravenous vitamin C in treating cancer. In 2004, doctors in America and Puerto Rico published clinical cases of vitamin C successes against cancer. In 1990, American doctors published their results successfully using vitamin C to treat kidney cancer and in 1995 and 1996, other cancers. Using 30,000 mg of intravenous vitamin C twice per week, they found that "metastatic lesions in the lung and liver of a man with a primary renal cell carcinoma disappeared in a matter of weeks. . . We subsequently reported a case of resolution of bone metastases in a patient with primary breast cancer using infusions of 100 grams, once or twice per week." In 1982, Japanese doctors showed that vitamin C greatly prolonged the lives of terminal cancer patients.

Why are ACS and Cancer Research UK oblivious to the weight of evidence? All these previous clinical reports were published in peer-reviewed medical journals. One may bear in mind that both ACS and Cancer UK made their restrictive statements in August 2008. *Yes in 2008!!!*

In spite of increasingly compelling evidence for 22 years, both the American Cancer Society and Cancer Research UK are dragging their feet. Foot-dragging costs lives. Hundreds of thousands of people have died from cancer that could have been helped with ascorbate therapy. But for decades, their three advocated cancer treatments have been 'cut, burn, and drug': surgery, radiation and chemotherapy. This after having spent above 500 billion dollars in so called research to make highly toxic drugs with well know side effects and having caused over a million death directly attributable to wrong treatment and due to side effects of the cut/burn/drug approach. The treatment's side effects literally starve the patient to death—in fact 45% of cancer patients die not from the disease but due to side effects of the mainstream treatment and due to malnourishment /starvation.

The use of high doses of vitamins and other safe methods which can target and specifically destroy only the cancerous cells while not harming the healthy cells has been thoroughly excluded and in fact has been ridiculed.

Indeed, ACS still says: "If a supplement is taken, the best choice for most people is a balanced multivitamin/mineral supplement that contains no more than 100% of the 'Daily Value' of most nutrients." That is harmful advice. Many well designed clinical studies show that large doses of vitamin C and other nutrients improve both quality and length of life for cancer patients. The key is the use of sufficiently high quantities, appropriately administered. More orange juice just won't do it.

Cancer Research UK even maintains (1) that vitamin C "can make cancer treatment less effective, reducing the benefits of radiotherapy and chemotherapy." That statement is untrue. (12,13) Oncologists routinely administer antioxidant drugs along with chemotherapy with no diminution of effect. (14)

ACS and Cancer Research UK say that there is "no evidence from clinical trials" that vitamin C is any good against cancer. They should start reading the medical literature. They are way behind the times.

Vitamin C confirmed to kill cancer cells

Vitamin C is a powerful antioxidant effective against cancer. Cancer cells metabolize anaerobically (without oxygen) and so produce no antioxidant enzymes. This makes them unable to metabolize the antioxidant activities of vitamin C thus suffocating their means of energy production. Mega dose vitamin C selectively targets cancer cells while providing healthy cells protection against oxidative stress.

Vitamin C also increases intracellular production of hydrogen peroxide which selectively destroys cancer cells due to their relative deficiency of the enzyme Catalase. Catalase metabolizes Hydrogen peroxide into water and free oxygen in healthy cells but is absent in cancer cells.

1. Tumor cells are more susceptible to the effects of mega dose, ascorbate-

induced peroxidation products because of a relative catalase deficiency.

2. Concentrations of ascorbate high enough to kill tumor cells likely can be achieved in humans. Since humans have lost the ability to produce Vitamin C inside their body, dose high enough to kill tumor cells can only be given through supplementation. It is not possible to reach this dosage level through diet alone, but consuming vitamin diet is beneficial.

Researchers found that diets high in vitamin C significantly reduce the risk of mouth, throat, stomach, and pancreas cancers. They have also been found to reduce breast, cervix, and rectum cancers. Research shows that a combination of both vitamin C and beta-carotene are important factors in reducing your risk for cancer. It is best to eat foods high in Vitamin C whenever possible, and only take supplements when in special need.

Foods rich in Vitamin C are:

- Broccoli
- Brussels Sprouts
- Cabbage
- Cantaloupe
- Cauliflower
- Greens (collard, mustard, or turnip)
- Kale
- Kiwi
- Mango
- Papaya
- Peppers, sweet green or red
- Potato, white or sweet
- Strawberries
- Tomato and Tomato Juice/sauce

Chemotherapy does not work, so blame Vitamin C

When Memorial Sloan-Kettering Cancer Center announces that vitamin C may interfere with chemotherapy, the news media trumpet it far and wide.

But before cancer patients throw away their vitamin C supplements, they need to know rest of the story.

Most of the media dutifully reported the researchers' claim that the equivalent of 2,000 mg of vitamin C "blunted the effectiveness of the chemotherapy drugs." But only some of the media included a study author's incredible statement that "If you take an oral dose even as low as 100 milligrams a day" even "that could be harmful" during chemotherapy.

100 mg "could be harmful"? That is the amount of vitamin C in a few glasses of orange juice. Something is very wrong here.

First of all, this research involved mice with implanted cancerous tumors; it was not a trial on cancer patients. A mouse study is a long way from a human clinical trial. This obvious difference was conceded by the study authors. However, there is a more subtle and probably much more important factor they did not consider: all mice make their own vitamin C. Indeed, mice make quite a lot. Adjusted for body weight, mice synthesize the human body weight equivalent of approximately 10,000 milligrams of vitamin C each day. Incredibly, sick mice make even more. Mice given transplanted tumors become sick mice. So they automatically respond by producing Vitamin C.

Secondly, previous research has demonstrated that mice with cancer respond well to high-dose vitamin C therapy. One study found, "With an increase in the amount of ascorbic acid there is a highly significant decrease in the first-order rate constant for appearance of the first spontaneous mammary tumor. . . Striking differences were observed between the 0.076% ascorbic acid and the control groups, which synthesize the vitamin." Another study concluded that: "A pronounced effect of vitamin C in decreasing the incidence and delaying the onset of malignant lesions was observed with high statistical significance. By 20 weeks, approximately five times as many mice had developed serious lesions in the zero-ascorbate as in the high-ascorbate group." Interestingly enough, when this research was first publicized, the same media discounted these findings saying that mouse studies were not particularly applicable to people.

Thirdly, a mouse's ability to make vitamin C, and a great deal of it, is an overlooked confounding factor that may well render the entire experiment invalid. If the Sloan-Kettering team had tried their experiment on Guinea pigs, their results might have been very different. Guinea pigs are more like human beings in that they cannot make their own vitamin C. As controls for comparison, the researchers also treated "no-added-vitamin C" mouse cancers with chemotherapy. Chemo worked just fine on those mice, by the researchers own admission. And each of those mice was internally synthesizing a body weight equivalent of 10,000 mg/day of vitamin C, even though given none supplementally.

So how come 10,000 mg of vitamin C does not interfere with chemo treatment, and 2,000 mg - or even 100 mg - supposedly does?

A sweeping recommendation warning cancer patients to not take supplemental vitamin C, not even 100 mg, is irresponsible. It is impossible to justify caution about taking 100 mg of vitamin C daily when your animal subjects made the equivalent of one hundred times that amount, and chemotherapy in them was still reported as effective. You cannot have it both ways. If a synthesized 10,000 mg of C does not interfere, there can be no real "interference" or "blunting" from a supplemental 2,000 mg; and most certainly not from 100 mg.

The study did report tumor shrinkage, in both groups of mice receiving chemo. That is not surprising. Chemotherapy's claimed success is based on tumor shrinkage. But tumor shrinkage, encouraging though it is, is not a reliable indicator of long-term cancer survival. As cancer research critic Philip Day puts it, many patients are "cured but dead" after five years, hardly a long-term survival. Day, noting that this is not because oncologists are not trying, explains the chemotherapy quandary: "You can be insincere, or you can be sincerely wrong."

The Sloan-Kettering study team seems to have missed the essential point that vitamin C is not just an antioxidant. Inside cancer tumors, it also acts as pro-oxidant, killing malignant cells. Comments Dr. Steve Hickey, of Manchester, UK: "Essentially, the paper seems to be rather misguided and

shows a lack of understanding of the dual nature of vitamin C in tumors. Chemotherapy has been shown by over 40 years of clinical trials not to work in the majority of tumors, and its use is counterproductive."

Chemotherapy drugs have come and gone; the five year survival rate for cancer treated with chemo has remained virtually unchanged for decades. Unfortunately, *just about 2% of all cancers respond to chemotherapy*. Specifically, one scientific review concluded, "The overall contribution of curative and adjuvant cytotoxic chemotherapy to 5-year survival in adults was estimated to be 2.3% in Australia and 2.1% in the USA . . . *chemotherapy only makes a minor contribution to cancer survival*. To justify the continued funding and availability of drugs used in cytotoxic chemotherapy, a rigorous evaluation of the cost-effectiveness and impact on quality of life is urgently required."

Perhaps this new, very well-publicized study results from an ever-growing realization that chemotherapy is largely ineffective, and the search is on for the reason why. Vitamin C should not be made the scapegoat.

Vitamin C, in doses well over 1000 mg/day, is known to help prevent cancer. Nearly 40 years ago, a review concluded that "Many factors involved in host resistance to neoplasia are significantly dependent upon the availability of ascorbate." Beginning in the 1970s, many well-designed studies show that very large doses of vitamin C improve both quality and length of life for cancer patients since they invariably are "significantly depleted of ascorbic acid." When given vitamin C, "The mean survival time is more than 4.2 times as great for the ascorbate subjects . . . This simple and safe form of medication is of definite value in the treatment of patients with advanced cancer." Additional clinical trials have confirmed this over the past several decades.

Even more importantly, recent research indicates that in high doses, vitamin C is selectively toxic to cancer cells. That means vitamin C can function very much like chemotherapy is supposed to, but without the severe side effects of chemotherapy. "A regimen of daily pharmacologic ascorbate treatment significantly decreased growth rates of ovarian, pancreatic, and glioblastoma

tumors established in mice. Similar pharmacologic concentrations were readily achieved in humans given ascorbate intravenously."

"Cautioning" the public to avoid taking any supplemental amount of vitamin C will decrease host resistance to cancer, increase the incidence of this dreaded disease, and shorten survival times. A cynic might say it will also create a larger market for chemotherapy.

Is vitamin C a commercial competitor for chemo? To answer this, one needs to consider what appears to be serious conflict of interest at Sloan-Kettering. Bristol-Myers-Squibb makes chemotherapeutic drugs. According to a DEF 14A SEC filing of March 22, 2006, the Chairman of the Board of Bristol-Myers-Squibb is also a director of the Coca-Cola Company, and Honorary Chairman of Memorial Sloan-Kettering Cancer Center. (http://sec.edgar-online.com/2006/03/22/0001193125-06-060566/Section8.asp). A previous Bristol-Myers-Squibb Chairman of the Board was a director of the New York Times Company. He was also Vice Chairman of the Board of Overseers and the Board of Managers of Memorial Sloan-Kettering Cancer Center and Chairman of the Board of Managers of Sloan-Kettering Institute for Cancer Research. (http://www.secinfo.com/dsvrt.bC7.htm) Some sources say that there are even more Bristol-Myers-Squibb directors who have or held positions on the board at Memorial Sloan-Kettering Cancer Center.

Positive endorsements for vitamin C as a cancer fighter are not in the interests of any pharmaceutical company. Scaring the public away from vitamin C might be profitable. It appears that Sloan-Kettering is biased. So are media reports that attack vitamins.

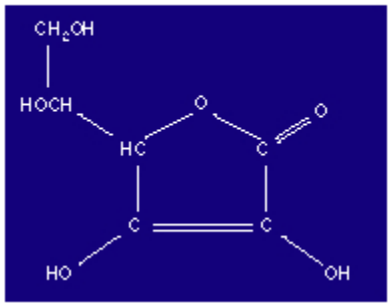
If the Sloan-Kettering study authors' recommendations to not take 2,000 mg, or even 100 mg, of vitamin C are followed, there will definitely be an increase in the number of people that need chemotherapy.

Ascorbic Acid in the Prevention and Treatment of Cancer

In the mid-18th century, James Lind first demonstrated that the juice of fresh citrus cures scurvy. The active agent, the enolic form of 3-keto-L-

gulofurnlactone, or ascorbic acid, was isolated in the late 1920s by Albert Szent-Gyorgyi.

Figure 1. Structure of Ascorbic Acid.



By the mid-1930s, methods had been devised to synthesize ascorbic acid, making it widely available at low cost. In the 1990s, it is the most commonly used single supplement in the U.S.

In 1954, W.J. McCormick, a Canadian physician, formulated the hypothesis that cancer is a collagen disease, secondary to a vitamin C deficiency. While alternative cancer treatments, such as The Gerson therapy, have been incorporating diets high in vitamin C for many years, the use of vitamin C supplementation in large doses for the prevention and treatment of cancer was further advanced in 1971 by Linus Pauling, PhD, and Ewan Cameron, MD. Since 1971, considerable attention has been paid to vitamin C and cancer, particularly in the area of prevention.

Biochemistry of Ascorbic Acid

Ascorbic acid is widely distributed in plants, its concentration varying from 0.01 percent in apples to about 1 percent in rose hips and citrus. It is one of the most important reducing agents occurring in living tissue. While most animals synthesize their own vitamin C, *humans and a few other animals, such as non-human primates, guinea pigs, and fruit bats do not.*

Ascorbate accelerates hydroxylation reactions, in part by donating electrons to metal ion cofactors of hydroxylase enzymes. Hydroxylation reactions are important in collagen synthesis, conversion of lysine to carnitine, conversion of dopamine to norepinephrine, and in tyrosine metabolism. Ascorbate is also

utilized to catalyze other enzymatic reactions, such as amidation necessary for maximum activity of the hormones oxytocin, vasopressin, cholecystokinin, and alpha-melanotropin.

Ascorbic acid is a water-soluble, chain-breaking antioxidant which reacts directly with singlet oxygen, hydroxyl, and superoxide radicals. It also may react with tocopheroxy radicals to regenerate vitamin E. Conversely, ascorbyl radicals are quenched by vitamin E.

Mechanisms of Action

Proposed mechanisms of vitamin C activity in the prevention and treatment of cancer include:

1. Enhancement of the immune system by increased lymphocyte production;

2. Stimulation of collagen formation, necessary for 'walling off' tumors;

3. Inhibition of hyaluronidase, keeping the ground substance around the tumor intact and preventing metastasis;

4. Inhibition of oncogenic viruses;

5. Correction of an ascorbate deficiency, often seen in cancer patients;

6. Expedition of wound healing after cancer surgery;

7. Enhancement of the effect of certain chemotherapy drugs, such as tamoxifen, cisplatin, DTIC and others;

8. Reduction of the toxicity of other chemotherapeutic agents, such as Adriamycin;

9. Prevention of cellular free radical damage;

10. Neutralization of carcinogenic substances.

Taking a closer look at the phenomenon of hyaluronidase inhibition Cameron, Pauling and Leibovitz wrote in Ascorbic Acid and Cancer: A Review: "the dangerous features of neoplastic cell behavior (invasiveness, selective nutrition, and perhaps growth) are caused by microenvironmental depolymerization. In turn, this matrix destabilization is brought about by constant exposure to lysosomal glycosidases continually released by the neoplastic cells. Finally, ascorbate is involved in the natural restraint of this degradative enzyme activity."

Proper collagen formation is an important factor in the encapsulation of tumors or the slowing of metastasis via the development of an almost impermeable barrier (known as the schirrus response). Ascorbic acid plays an important role in collagen synthesis and stability. A lack of ascorbate significantly reduces hydroxylation of proline and lysine to hydroxyproline and hydroxylysine, respectively, jeopardizing proper collagen cross-linking. This leads to instability of the triple helix of collagen which, in turn, results in increased collagen catabolism. In vitro, vitamin C also has been found to increase collagen synthesis by fibroblasts.

Cancer patients tend to be immuno-compromised, demonstrating low lymphocyte ascorbate levels. The immune surveillance system is important, both in inhibiting the initiation phase of cancerous growth, and also in the prevention of spread. Ascorbate supplementation increases the number and effectiveness of lymphocytes and enhances phagocytosis.

Vitamin C in the Treatment of Cancer

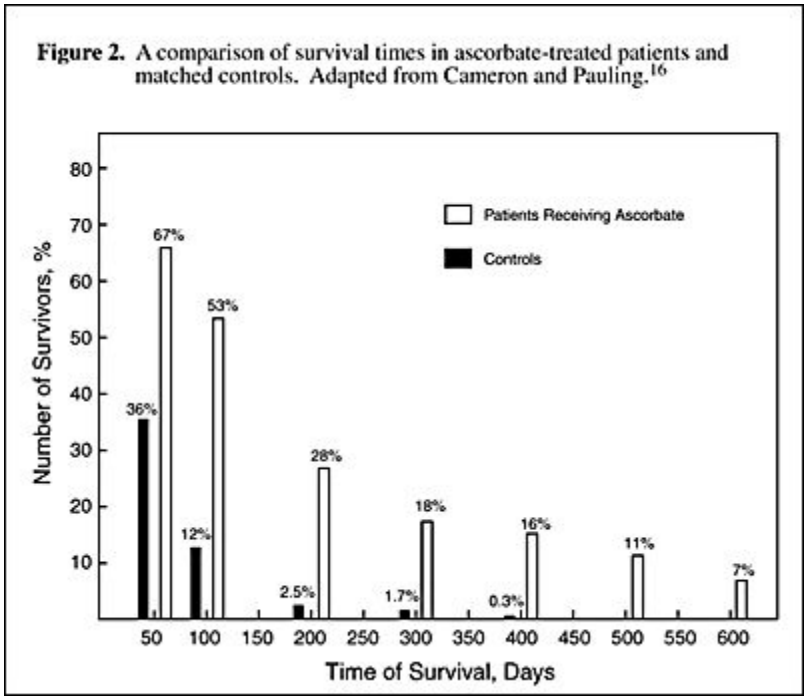
The Vale of Leven Studies:

Most of the studies on vitamin C and cancer relate to its protective effect, rather than use of the vitamin for the treatment of active cancer. The Vale of Leven studies conducted by Ewan Cameron, MD and his associates, (later including Linus Pauling, PhD), at his hospital in Loch Lomondside, Scotland, are among the few exceptions.

In preliminary studies which began in November 1971, a small group of patients with advanced cancer were given 10 grams of sodium ascorbate

daily. The initial testing was an uncontrolled study, conducted on 50 patients. Seventeen of these patients exhibited seemingly no response, 10 a minimal response, 11 retardation of the tumor growth, 3 ceasing of the tumor growth, 5 regression of tumor growth with long-term survival, and 6 experienced hemorrhage and necrosis of the tumors, which destroyed the tumors but killed the patients in the process. An evaluation of the life expectancy of these first 50 'terminally ill' patients treated with ascorbate yielded promising results. Based on data from previous similar groups of patients, it was expected that 90 percent of the group would be dead within three months of being labeled 'terminal.' When 10 g ascorbate was prescribed daily (beginning at the time the patient was labeled 'terminal'), by the 100th day of treatment the mortality rate was only 50 percent. Of the remaining 25 patients, 20 died between days 110 and 659, with an average survival time of 261 days; and five had an average survival time of greater than 610 days.

Subsequently, a controlled retrospective study was conducted, comparing survival times of 100 terminally ill cancer patients at Vale of Leven Hospital with 1,000 matched controls from the same hospital. The patients were randomly selected from the database of those terminal cancer patients who had received ascorbate. Each ascorbate-treated patient was matched with 10 controls from the same hospital of the same age, sex, and type and stage of cancer that had not been prescribed vitamin C. *In 90 percent of the cases, the ascorbate-treated group lived three times longer than the control group.* For the other 10 percent, long-term survival made it impossible to assess survival time with certainty, but at the time of publication of the study, *the ascorbate group exhibited greater than 20 times the survival rate of the control group.*



Having been criticized by some investigators for not assuring the subjects were randomly chosen from the same representative subpopulations in the treated and control groups, a second retrospective evaluation at the Vale of Leven hospital was undertaken in 1978 again with 100 patients receiving ascorbic acid compared to 1,000 matched controls without vitamin C.

Most of the ascorbate-treated group and about half the controls were the same subjects as in the initial study. This time, since there are different mean survival times for different types of cancer, the groups were further divided according to types of cancer, and controls carefully matched. In addition, the groups passed several 'randomness' tests. In each of the nine types of cancer the ascorbate group had a considerably longer survival time than their matched controls. *At the time of evaluation, eight patients in the vitamin C group were still living, while no one was alive in the control group;* this resulted in 321+ days longer lifespan for the vitamin C treated group. Factoring out those in the ascorbate group who were still living at the time of evaluation, the vitamin C group lived an average of 251 days longer than the control group.

Cameron and Pauling later evaluated the first 500 'terminal' cancer patients to receive ascorbate. In most cases, subjective improvement increased feeling of well-being, more energy, more alertness, decrease or elimination of pain, better appetite were noted by the ascorbate patients. Cameron reported a quite dramatic relief of bone pain from metastases in four out of five patients. Objective improvements included a decrease in malignant ascites and pleural effusion, relief from hematuria, some reversal of hepatomegaly and jaundice, and decreases in erythrocyte SED rate and serum seromucoid levels, all accepted indicators of a decrease in malignant activity. Furthermore, patients who had been on large doses of narcotics, such as morphine, for pain relief, showed none of the typical withdrawal symptoms.

Researchers have reported generally a subjective improvement in well-being, vigor, pain relief, and appetite was apparent within 5-7 days of the start of mega dose of Vitamin C. Increased energy was believed to be a result of improved carnitine synthesis with a resulting increase in triglyceride transport into cell mitochondria.

Uncontrolled trials conducted at two different hospitals in Japan during the 1970s also confirmed the increase in survival time of terminal cancer patients supplemented with ascorbate.

Based on the above cited studies the researchers concluded: *"It is our conclusion that this simple and safe treatment, the ingestion of large amounts of vitamin C, is of definite value in the treatment of patients with advanced cancer. Although the evidence is as yet not so strong, we believe that vitamin C has even greater value for the treatment of cancer patients with the disease in earlier stages and also for the prevention of cancer."*

Vitamin C in the Prevention of Cancer

Epidemiological Evidence

There is considerable epidemiological evidence pointing to the benefits of vitamin C in the prevention of a number of types of cancer. Unfortunately, epidemiological evidence is often difficult to assess since general dietary

factors are difficult to pinpoint. For instance, is high fruit consumption indicative of a high vitamin C intake or is it the fiber that is the key? In addition, frequently the studies report the effects of a number of antioxidants without separating the results for each. The following examines epidemiological evidence according to site of primary tumor.

Bladder

Interest in vitamin C and cancer of the lower urinary tract, including the bladder, stems in part from the discovery that dye-workers exposed to certain carcinogens in the workplace (which oxidize to endogenous orthohydroxy and hydroxylamine derivatives) were more likely to develop bladder cancer. It was hypothesized by at least one group of researchers that higher levels of ascorbate in the urine might prevent the oxidation of these carcinogens. They found that a dosage of 300 mg vitamin C in the form of 3 glasses of orange juice daily raised urinary ascorbate to a level capable of preventing, at least to some degree, the oxidation (or activation) of these carcinogens. The most important known risk factor for the development of bladder cancer is cigarette smoking. It is interesting to note that cigarette smokers tend to be lower in serum ascorbate than non-smokers.

An epidemiological study in Hawaii comparing 195 males and 66 females with cancer of the lower urinary tract with two matched controls each found a decreasing risk of cancer with increasing levels of vitamin C consumption for women but not for men. Another group of researchers noted low serum ascorbate levels in the majority of 35 patients with bladder cancer.

Breast Cancer

Plasma levels of ascorbate were significantly lower while platelet levels were higher in a group of recently diagnosed breast cancer patients when compared to a matched group of controls. Epidemiological studies appear to point to ascorbate as a possible chemopreventive for breast cancer. In the Iowa Women's Health Study, women who reported consuming at least 500 mg vitamin C daily had a relative risk of developing breast cancer of

0.79 (not statistically significant), compared with women who did not supplement with vitamin C. Rohan et al reported a small, statistically insignificant decrease in risks with vitamin C consumption (as assessed by dietary reporting). In a Spanish study comparing vitamin C intake among breast cancer patients and matched controls, the patients reported significantly lower intakes of dietary vitamin C than controls.

A meta-analysis of 12 studies and a number of different nutrients and their relationship to breast cancer found vitamin C intake had the most consistent and statistically significant inverse association with breast cancer risk.

A study to compare the 5-year survival rates of women diagnosed in the early stages of breast cancer, who were supplemented with 3 grams daily ascorbate, with a similar group who was not supplemented, found similar 5-year survival rates in both groups. Since the prognosis for women with breast cancer which is detected early is quite good in general, this is not surprising, as you would expect a good prognosis, with or without ascorbate supplementation.

Cervical Cancer

A Latin American study compared nutrient intake and dietary patterns of 748 cervical cancer patients with 1,411 controls. The results supported a protective affect of vitamin C against invasive cervical cancer. Other researchers have found a similar inverse relationship between cervical neoplasia and dietary vitamin C. A review article examining a number of studies concluded that in many, but not all studies, an inverse relationship between vitamin C status and risk for cervical dysplasia was observed.

Colorectal Cancer

Colonic polyps are recognized as a frequent precursor to colorectal cancer. In a group of 36 patients with polyps, 19 received 3 grams ascorbate daily and 17 received placebo. The researchers noted a decrease in polyp area after nine months of treatment with ascorbate but not placebo. In addition, a trend toward decrease in polyp number was noted. Other researchers

have used antioxidants to prevent recurrence of polyps in patients who had undergone surgical removal of their polyps. Patients were divided into three groups receiving either lactulose, a combination of vitamins A, C, and E, or nothing. Among 209 patients, polyps recurred in 5.7 percent of those given the vitamins, in 14.7 percent of those receiving lactulose, and in 35.9 percent of the untreated controls.

An Australian study examining dietary habits and incidence of colorectal cancer found vitamin C but not A to be protective. A similar study on patients of a major health plan in Los Angeles found a weak inverse relationship between supplemental and dietary vitamin C and incidence of colorectal cancer.

Esophageal Cancer

Esophageal cancer is among the more common types found in Lin-Xian County in northern China. Higher levels of nitrosamines have been detected in the gastric juices and urine of people in this area compared to those from a low-risk area of China. A positive correlation was found between esophageal lesions and nitrosamine levels. Intake of moderate doses of ascorbic acid by Lin-Xian subjects was found to decrease urinary nitrosamines to the level detected in the low-risk area.

The relationships of dietary and supplemental factors with esophageal cancer were examined in 147 males with esophageal cancer and 264 males with other diagnoses at Roswell Park Memorial Institute. Vitamins C, A, and intakes of fruits and vegetables were associated with decreased risks of esophageal cancer.

Leukemia

An in vitro examination of bone marrow cells taken from patients with acute nonlymphocytic leukemia was conducted. The cells were allowed to colonize on agar culture. In seven of 28 patients, the numbers of leukemic cell colonies were reduced to 21 percent of that of controls by the addition of ascorbate to the culture medium. Neither glutathione (similar oxidation-reduction potential as ascorbate) nor HCl (added to cause a comparable pH

reduction to ascorbic acid) resulted in a decrease in colonization. It was the researchers' opinion that "suppression was a specific effect of L-ascorbic acid and was not due to its oxidation-reduction potential or pH change. Leukemic cells were selectively affected at an L-ascorbic acid concentration attainable in vivo while normal hemopoietic cells were not suppressed."

Lung Cancer

Blood samples from 139 lung cancer patients were examined for both plasma and buffy coat ascorbate levels. Most samples showed hypovitaminosis C below the levels for clinical scurvy. Other researchers found hypovitaminosis C in the majority of 24 lung cancer patients. The First National Health and Nutrition Examination Survey related dietary habits with lung cancer risk. An estimate of dietary vitamin C intake by 24-hour recall was used. The amount of vitamin C in vitamins was estimated (i.e., guessed to be 60 mg in a multiple and 500 mg if taken as a sole supplement). The researchers found a protective effect of vitamin C (as well as vitamin E and carotenes) from dietary sources of these vitamins but reported no added benefit from vitamin supplementation.

Non-Hodgkin's Lymphoma

An epidemiological study of factors contributing to non-Hodgkin's lymphoma (NHL) in men and women in Nebraska found a statistically significant inverse relationship between intakes of vitamin C, carotenes, green leafy vegetables and citrus fruits, and incidence of NHL.

Pancreatic Cancer

A review of the epidemiological evidence of a dietary link to pancreatic cancer reported consistent inverse relationships between vitamin C and fiber, and the incidence of pancreatic cancer.

Reticulum Cell Sarcoma

Cameron et al reported on a case of disseminated reticulum cell sarcoma successfully treated with high dose ascorbate (Vitamin C). Within 10 days

of beginning treatment the patient felt subjectively much better and subsequent chest x-rays indicated he had gone into remission. When ascorbic acid was discontinued, reactivation of the disease coincided. A second but slower complete remission occurred when vitamin C was reinstated.

Salivary Cancer

A case-control study conducted in the San Francisco area examined dietary effects on incidence of salivary gland cancer. When 141 patients with salivary gland cancer were compared to 271 controls, it was determined that vitamin C intake of greater than 200 mg daily compared to 100 mg daily or less resulted in a 60 percent decrease in incidence of salivary gland cancer.

Stomach/Gastrointestinal Cancer

There are normally high levels of ascorbic acid in the gastric mucosa and gastric juices, suggesting that vitamin C might play an important metabolic role in the stomach. Helicobacter pylori has been implicated as a risk factor for gastric cancer. In a group of 88 dyspeptic patients, 58 tested positive for H. pylori. Gastric juice vitamin C levels were examined in these patients as well as in the H. pylori-negative patients. Gastric ascorbate levels were significantly lower in the H. pylori-positive group when compared both with the negative group and to themselves after eradication of the bacteria.

Cohen and associates examined epidemiological studies and found 9 of 10 case-control studies and 10 of 11 non-controlled studies yielded a significant inverse relationship between ascorbic acid intake and stomach cancer risk. Administration of vitamin C to patients with asymptomatic peptic ulcer disease resulted in a decrease in DNA damage in 28 of 43 subjects.

[*Note: for therapeutic purposes a minimum dosage of 2 grams to 30 grams of Vitamin C over a long period is recommended, dosage below this level should not be considered as a curative for this or any other type of cancer. -- Dr. Paul*]

Safety of Vitamin C

Although a lot of vitamin C bashing takes place, even its most ardent and biased critics have to admit that no 'over dose' can happen as there is no known upper limit for ingestion either orally. Through IV if reasonable precautions are taken mega dosing is quite safe. Ideally the oral dosage should be gradually increased until gut tolerance level is reached. It can be maintained at this level for some time and once again increased. Long term treatment is possible and infact necessary for optimum benefits. *Vitamin C in high dosages appears to be safe for the majority of individuals.*

Conclusions

Extensive epidemiological evidence points to the capacity of Vitamin C to prevent cancer. In addition, some of the studies which have been conducted on the use of high dose of Vitamin C in the treatment of cancer have yielded promising results. While vitamin C alone may not be enough of an intervention in the treatment of most active cancers, it definitely appears to improve quality of life and extend survival time in comparison to conventional medicine.

It should be considered as part of a treatment protocol along with other known anti-cancer agents such as Hydrazine sulphate, Low Dosage Naltrexone, Niacin, Pyridoxine, Vitamin D3, Lycopene, Neem and many other safer and better options that are available. These can be used in any combination, safely on all patients with cancer of any type and at any stage. [*Please note: when administering Hydrazine sulphate it is required to stop concurrent administration of Vitamin C and B6, for the duration -- Dr. Paul]*

This should be the preferred and a more humane and sensible approach over the cut/burn/poison, soul numbing and body destroying approach offered at great financial and other costs by main stream medicine.

Become a victor ---- Not a VICTUM.