

Linus Pauling could save your life... But he can't get the money to do it

Despite evidence that vitamin C is effective in the treatment of cancer, this two-time Nobel Prize winner is refused sufficient money to prove his theory.

By Gary Null

A few years ago when Dr. Linus Pauling announced the effectiveness of Vitamin C in the prevention and treatment of the common cold, there were few in the medical establishment who took him seriously. But the people listened. Now there is hardly a household without the familiar tablets on the shelf — and the effectiveness of this nutrient is practically beyond dispute. Today when Dr. Pauling, the only individual ever to win the Nobel Prize two times, in diverse fields, talks about his latest research — vitamin C and cancer — the medical establishment freezes up again. Are the people still listening? Let's hope so, because they may be the only way that Dr. Pauling can continue his work in this vital area of research.

It's ironic to think that throughout his illustrious career Dr. Pauling never had trouble getting funds. Indeed his work in molecular bonding led to the first scientific attempts at "crossing over" between important diverse fields of interest such as physics, chemistry, and medicine, and established the "new chemistry" as a study that would embrace all aspects of life. Dr. Pauling brought the best of each of these fields together in the study of the human organism, uncovering secrets to the molecular structure of amino acids, anti-toxins and red blood cells, including that of sickle-cell anemia.

Although Dr. Pauling's achievements occur in so many diverse fields, there is one thing that always seems to remain constant — he is never afraid of new ideas, and in fact has often been



Gary Null is an editor of *caveat emptor*, internationally known nutritionist and consumer educator. His work has been published both in scientific journals and popular magazines.

the center of controversy because of them. In the 50s and 60s, he was the beacon around which many people gathered to protest atomic testing and weapons development, and was instrumental in the signing of the 1963 Nuclear Test Ban Treaty, for which he received his second Nobel Prize — for Peace — in 1964.

Today at the age of 77, Pauling has once again become a controversial figure, this time over the importance of vitamin C — ascorbic acid — in the treatment and prevention of cancer. Since his involvement with vitamin C in 1969, Pauling has found that funds which once flowed freely have dried up, doors have closed, and colleagues have grown cold. But none of this has put a dent in Pauling's incredible energy, an energy which would exhaust a man half his age, but which may have something to do with

the 10 grams of vitamin C he takes every day.

Indeed a connection with vitamin C to energy production in the human body is only one aspect of a landmark double-article review recently published in *Cancer Research* (vol.39) and the *Journal of the International Academy of Preventive Medicine* in March of this year. In these two issues, Dr. Pauling teamed up with his collaborator of several years, noted Scottish researcher/surgeon Euan Cameron to produce the most startling and perceptive overview of ascorbic acid that has ever been published on the subject.

Integrating conclusions from over 350 scientific studies published on ascorbic acid since James A. Lind's treatise on Scurvy in 1753. Drs. Pauling and Cameron have drawn a powerful portrait of this substance — arguing that vitamin C may be the most useful nutrient in understanding and securing the quality of human health. This review includes not only Dr. Pauling and Cameron's impressive studies on the effects of vitamin C in dramatically increasing the survival times of terminally ill cancer patients, but finally uncovers the role of vitamin C in the complex chemistry of "host resistance" to the actual development of cancer and pre-cancerous conditions.

Drawing on the recent explosion of research on this subject, Pauling and Cameron have linked vitamin C to many of the body's natural defense mechanisms such as the intercellular matrix, collagen formation, the for-

mation of white blood cells, hormone balance, anti-viral activity, anti-bacterial activity, and vitamin C's chemical relationship to carcinogenic hydro-carbons, nitrosamines, cigarette smoking, ultraviolet rays, anemia and energy production. One can only wonder at the diversity of mechanisms that vitamin C seems to enhance — all leading to an increase in the body's natural resistance — but perhaps it has taken a man so fluent in many scientific fields to discover these new links. Perhaps what has brought this vast information on vitamin C together in constructive, connective and crystal clear form has been the kind of thinking Dr. Pauling has advocated for years; the unified approach to physics, chemistry, medicine, and Peace — to build the quality of human life.

Why now when Dr. Pauling has uncovered positive evidence of the effectiveness of a new idea in the treatment and prevention of the most un-treatable and unpreventable disease known to man is he ostracized from his peers and denied funds? Perhaps the answer lies in what the research is about: the role of nutrition against disease.

The Establishment

Time and again we have seen the awesome political power of the medical establishment wield its double-edged sword against the possibility of nutrition gaining the adequate and careful research it so desperately needs to contribute to the health of our health-starved country. Time and again the news of possible nutrition-linked cancer treatment is suppressed by the medical-pharmaceutical interests which exercises substantial influence over the national news media so that the public can be duped into thinking that there is nothing more to be done but "a check-up and a check," though thousands in their own neighborhoods die around them every year of the same disease — cancer. Since World War II, the combined political and economic interests of the American Cancer Society, the AMA and the petro-chemical industry has controlled the vital news of nutritional research and allowed much information to be downgraded or disregarded. Now, we are finding out, they have also kept funds from those who may be doing the most significant work.

Recently, only six million dollars of the entire National Cancer Institute budget of \$800 million was allotted to nutritional research: curiously, Dr. Pauling was not one of them.

"NCIA gave us a small grant," said Pauling in an interview a few months ago, "\$50,000 to study the body fluids of cancer patients. This has nothing to do with the vitamin C work. I've applied *six times* for grants to the National Cancer Institute one a year for the last six years and I've been turned down *five times*. I don't know what will happen this year. So, we haven't received any money for this important attack on cancer nutrition and cancer. After all, it's our money, the money of the American people. Eight hundred million dollars a year that NCI is spending to make some contribution to the control of cancer and I think they're missing a bet in not following up this lead."

Dr. Pauling's "lead" is more than that at this point — there is definite positive evidence that vitamin C can be useful in prolonging the survival times of patients with terminal cancer. In Dr. Pauling's first study, published in 1976 with noted researcher Dr. Ewan Cameron, Senior Consulting Surgeon at the Vale of Leven District General Hospital in Scotland, it was found that the mean survival time of terminally ill cancer patients who had received supplemental dosages of vitamin C (sodium ascorbate) was more than 4.2 times greater than similar patients who were treated identically, but with no ascorbate supplement.

Dr. Pauling and Dr. Cameron concluded at that time that "the results clearly indicate that this simple and safe form of medication is of definite value in the treatment of patients with advanced cancer. However, since then, these eminent researchers have conducted further studies and published a 1978 follow-up report. Said Dr. Pauling, of these findings, "We investigated to see what happened after two years had gone by — and to check out the controls. The results continue to be extraordinarily good. In a paper published last fall (1978), we were able to report that the patients with terminal cancer who had been expected to die within two or three months had lived more than seven times as long after being pronounced

terminal. In other words, the ones who received vitamin C had lived more than seven times as long as the controls. All of the controls had died, most of them within a few months, with only four out of a thousand living more than a year. Twenty-two of the 100 ascorbate-treated have lived more than a year and eight are still alive as much as seven years after they have been pronounced to have terminal cancer. With a few of them, the cancer has gone away to such an extent that we might as well say that their life expectancy is the same as if they hadn't had cancer at all"

Disbelief and such a simple substance

Such startling results, published in the Proceedings of the National Academy of Sciences, a highly respected scientific journal, should have made front page news, The press, controlled very definitely by the medical establishment, all but ignored this major achievement. Dr. Pauling attributes this to disbelief.

"The National Cancer Institute and the American Cancer Society find it hard to believe that this simple substance — vitamin C is cheap, it only costs 10 cents a day for the 10 grams we give our patients each day — and which is non-toxic (people can take a half pound of it without any significant side effects) it's hard for them to believe that this simple cheap substance that every human being has been taking in small amounts in order to keep alive could have such extraordinary effects on cancer patients."

This question of "disbelief" in the face of facts on the part of those institutions who are supposedly conducting the "War on Cancer," can only remind us of the oppression of innovative scientific theories that has occurred throughout history — from Galileo to Pasteur. In each case the establishment had some power to lose by accepting the theories and clinically proven results of the innovator. In the case of Galileo, it was the Church; in the case of Pasteur, it was the entire way that medicine was practiced. What is it today that the medical establishment has to lose by supporting the work of Drs. Pauling, Cameron, and countless others who continue to work in the field of diet and nutrition? They lose control of the

millions of dollars spent by Americans every day on often ineffective, but expensive treatments such as surgery, radiation, and chemotherapy. The petro-chemical industry would lose control of the billions of dollars spent by the medical establishment on drugs for therapy, as well as the untold amounts of money the average American spends on processed, chemicalized and denatured food that is now suggested to be one of the causes of cancer. Further research into diet and nutrition would only make all these connections more obvious, and enable the public to place the blame squarely where it belongs: on the petro-chemical industry which de-vitalizes our food as well as our bodies by polluting practically every aspect of our environment, and on their supporters in the medical establishment, who continue this pollution by refusing to accept the facts presented by Dr. Pauling and other researchers of his caliber.

"We have been criticized in the past," says Dr. Cameron, "for not conducting a random double blind study — a situation where neither the patient nor the doctor knows what the patient is getting. This is an ethically wrong situation because we do believe that if something is of some help to a dying cancer patient you shouldn't deliberately withhold it. After all, people who are dying of cancer are not laboratory animals."

Dr. Cameron has gotten around this situation by keeping records on cancer patients in two other hospitals near his own, one in which many are treated with vitamin C, and another where the policy is not to treat patients with vitamin C at all. "I know it's not perfect for the statisticians," says Cameron, "but basically the cancer patients coming into these three hospitals are being treated the same way — and are from the same population — except that some are getting vitamin C and some are not."

The latest update according to Dr. Cameron, showed that patients receiving the vitamin C were living 1.56 times as long as those who weren't. Even this is a conservative estimate because these results were based on the date the patient *first* appeared in the hospital with a symptom that finally proved to be cancer,

and is measured from that date until the date of the patient's death. Dr. Cameron maintains that although this is a useful data, it does not give a true picture of the strength of this health-giving vitamin.

"Here the vitamin C tends to be brought in rather late in the illness. If you take the date from the point at which the vitamin C is introduced, then the figure jumps up to patients living about 3.5 or 3.6 times as long as those who were not treated with ascorbate."

In these studies Dr. Cameron has also found that there may be some relationship between vitamin C and other methods of therapy. This was mentioned in the Pauling/Cameron review as an important step in the health of all cancer patients. Using vitamin C in combination with conventional therapy, the patient may be able to retain his inherent natural resistance and better fight the disease. "In the present state of our knowledge," says Cameron and Pauling, "clinicians have a very clear duty to remove the main tumor cell mass if at all possible by surgery, radiotherapy, cytotoxic chemotherapy, or combinations of these three, remembering that supplemental ascorbate can protect the host against all three forms of assault, so enhancing their therapeutic effectiveness. Since cancer patients are almost invariably quite severely depleted of ascorbate, the correction of this deficit should be an estimated part of any comprehensive cancer treatment given."

In his own research, Dr. Cameron seems to think that patients who have taken vitamin C before and during chemotherapy have fewer toxic side effects, but more studies must be done to prove this conclusively.

Grants and money denied

But, as anyone knows, more studies mean more money; more money means "grants" to scientists. Where can the money come from if not from the government or larger foundations who are currently withholding their support from studies in nutritional research? We suggested that the vitamin industry, which was made overwhelmingly successful by Dr. Pauling's

original work with vitamin C, start to pay back the debt that they owed him in grants for further research. But a wise Pauling had this to say, "My policy has been not to appeal to the vitamin companies for help because I didn't want to get tied up with the companies to such an extent as to interfere with our objectivity. We have, however, received some gifts from vitamin companies and we accept them. As long as we aren't being supported to an overwhelming extent by vitamin companies I think it's all right. What I would prefer, of course, would be to have some of the foundations like the Rockefeller Foundation and the Ford Foundation, which used to support our work, or the Johnson Foundation, which is especially interested in health, giving us support for our cancer and vitamin C work, as well as the National Cancer Institute and the American Cancer Society."

Rejected five times by the NCI, Dr. Pauling has also had no response from the American Cancer Society, which every year gives less than 25 percent of its annual \$150 million income in research grants to "deserving" projects. Said Dr. Pauling of his experience with the ACS, "I sent an application to the American Cancer Society about a year and a half ago, and after about 6 months they sent it back without comment." But this was not the end of Dr. Pauling's dealing with the cancer establishment.

As Dr. Pauling was reading the Sept. 22, 1978 edition of the **Cancer Letter**, he found that Benno Schmidt, no less than chairman of the President's Cancer Panel for the NCI, was saying that "His (Dr. Pauling's) application wasn't really a grant application." Schmidt excused the actions of his organization by accusing Dr. Pauling of not making the proper request for funds. Dr. Pauling quickly sent Mr. Schmidt a letter enclosing the first page to all five of his applications made to NCI, and requested that Mr. Schmidt publish a correction in a forthcoming issue of the **Cancer Letter**.

When the correction came many months later, Dr. Pauling found that although Benno Schmidt admitted he had misunderstood, he insisted that Dr. Pauling's applications were incomplete, that they had not given details about the background for the

proposal, references to the literature, or about the way the proposed studies would be carried out.

"This is not true, of course," said Dr. Pauling in an exclusive interview a few weeks ago in New York City. "I wrote a letter to the **Cancer Letter** just last week saying that these five applications in general had about 100 pages average of background material, 800 references to the literature ... I'm sure that **Cancer Letter** will publish that. But I also wrote to Benno Schmidt and said that he should look into the matter of why he is misled by his people. Why he, Chairman of the National Cancer Advisory Committee, would be given false or misleading information by people at NCI."

Dr. Pauling, however, had a few reasons of his own for suspecting why. "They're protecting themselves, I suppose. I think there may be a feeling among the people who make the decisions that the higher-ups would be opposed to my getting a grant — that Proxmire, for example, might say, 'Why is the NCI wasting money on the proposal made by that old fellow, who doesn't have an MD degree?'"

Pauling went on to say, "It's terrible that there are these people, some of them really distinguished authorities, who are willing to make statements that deviate from the truth. It's hard for me to understand why they won't look at the facts. I think they're not thinking clearly — they ought to be taking more vitamin C."

Pauling's wry humor is one that has developed over the years, and his wit has been sharpened by controversy as well as an endless string of rejections that would depress all but those with the strongest convictions. Three years ago, for example, Dr. Pauling was invited by the **New York Times** to write on the subject of vitamin C. Said Pauling of the event, "They offered to pay me \$400 for it. So I wrote it, the proper length, submitted it, and it was turned down. I think they thought it was inappropriate to publish it."

Pauling said this reminded him very much of a similar rejection in 1973 from the Proceedings of the National Academy of Sciences, of which he is a long-standing member. "They turned down our paper by Cameron and me; it was the first paper with a member as an author that had

been rejected in the 58 years that the Proceedings had existed. The editor, the chairman of the editorial board who's a close friend of mine, said he thought it would raise false hopes in cancer victims and their families.

Well of course I think it's good for people to have hope and vitamin C does bring them hope — hope with some reason behind it."

"I feel hopeful myself," said Pauling, musing about these times. "I feel we're turning the corner, just as around 1960 finally, I felt that the attitudes of the government, in this case President Kennedy himself, about the nuclear weapons tests was changing. I was carrying on a campaign with other scientists to stop the nuclear weapons tests, then, starting in 1957 with a vigorous effort. And by 1960, it was clear that the attitude of the government officials toward nuclear tests was changing, and it did change. The treaty went into effect October 10, 1963."

Dr. Cameron also has optimism about the effect of his research on the medical establishment. "I think I can see the climate changing," he said in a recent interview.

Unfortunately, the errors of science are occurring at a time when this disease strikes one in four Americans, and kills almost 400,000 annually. Is the "War on Cancer" perhaps a "War on Cancer Cures" instead? This sentiment is even being reflected in such columns as Jack Anderson's this year. Anderson reported that the "National Institute of Health has permitted other nations to pull ahead of the United States in vital fields of research. The critics blame stodgy old guard bureaucrats who pour government money into the same tired old research projects but won't take a chance on anything at all unconventional." In this column Jack Anderson named four researchers — Dr. Anthony Verlangieri of Rutgers, Dr. Jordan Schlegel of Tulane and Drs. Pauling and Ewan Cameron who simultaneously cant results with vitamin C, all of whom have received no funds for their research. Says Dr. Pauling of the organizations empowered with millions of dollars to wage this "war," "NCI and people in cancer generally

haven't tried to look for new ideas in the control of cancer, but have been belaboring the old ideas — 25 years old — like chemotherapy, which has had some limited success with a few kinds of cancer, but for the great majority of cancers has had little effect except to make the patient miserable in the remaining weeks or months of his life. With vitamin C, we know that there are no side effects, it's generally beneficial to the patient not only in controlling cancer, but in improving his general health."

In recent years, chemotherapy has even been found to be more harmful than previously imagined. Although it was hailed in press stories throughout the sixties and seventies as the great new hope, with little mention of the deleterious side effects, as far back as 1973 doubts were being raised. Dr. Dean Burk, head of NCI's Cytochemistry Section, issued an open letter to the director of the institute charging that virtually all the conventional anti-cancer drugs had been found, in NCI's *own* studies, to cause cancer. All the more important then, to extend new funds to research into other, safer treatments for cancer, yet the NCI as well as the ACS responded to these charges by only upping the amount of money given to the harmful treatments.

The Search

The knowledge of the ineffectiveness of traditional cancer therapy did prompt some scientists to search for new methods of treatment many years ago. One of them was Dr. Ewan Cameron who simultaneously reached the same idea about using vitamin C independently of Dr. Pauling, in his own hospital in Scotland more than 10 years ago. Since then the two have been working closely together, and Dr. Cameron is now on sabbatical for one year, spending the time with Dr. Pauling in California, where they are currently working on a book.

In an exclusive transatlantic interview conducted earlier this year, Dr. Cameron told us how he made the discovery:

"I had written a book in 1966 about the behavior of tumor cells and in theory how one might be able to restrain them. We had found that vitamin C was almost nonexistent in cancer patients and that any cancer patient who had surgery and radiation had

no vitamin C save for a few mg., and they were developing very severe problems."

Dr. Cameron told us he felt then that the answer really wasn't in surgery, radiation or chemotherapy, but had to be something that would improve the body's immune response. Why — if you take two patients who had the same type of cancer, and treatment, argued Dr. Cameron, will one die in two months and the other in three years? It had to be something to do with the body's own immune system, and vitamin C could help.

Dr. Pauling concurs: "There hasn't been very much attention to it. But the vitamin C makes the body's natural protective mechanisms more effective so that people whose protective mechanisms aren't working quite well enough to overcome the cancer or the infectious diseases are stimulated with vitamin C. Their protective mechanisms are potentiated to such an extent that they are able to resist the disease much more effectively — it's a very important matter."

The importance of vitamin C in contributing greatly to the body's resistance to disease is probably one of the most startling scientific discoveries in Dr. Pauling and Dr. Cameron's recently published historic review of the role of ascorbic acid in the mechanisms leading to the development of cancerous conditions in the human body. "All of the recent studies," the report states, "have been based on the idea that a significant control of developing cancer might be achieved by enhancing the natural resistance of the patient to his or her disease...and it became clear that ascorbate might function in a number of ways to potentiate the various natural protective mechanisms of the body."

The idea was actually promoted by Dr. Cameron in his 1966 book *Hyaluronidase and Cancer*, in which he states that "strengthening the intercellular ground substance, which holds cells together, should permit normal tissues to resist the infiltration of malignant tumors."

Besides its immuno-supportive, anti-viral and anti-bacterial properties, vitamin C has long been shown to be a contributing agent in the strength of the connective tissue; in their review,

Dr. Pauling and Cameron show how this "intercellular matrix" of collagen, enzymes, and other materials form a mechanism which may be able to encapsulate and retard the growth of cancer cells. Says the report of the effect of vitamin C on this vital structure, "Ascorbic acid is essential for the integrity of this intercellular matrix and its resistance to malignant infiltrative growth, and there is strong evidence that it is involved in the inhibition of invasive tumor enzymes. It is also required in the formation of new collagen, allowing the resistant patient to enmesh his tumor cells in a barrier of new fibrous tissue."

The Pauling/Cameron research review includes an illuminating discussion of the ways that his intercellular ground can effect the potential for human resistance to cancer, and shows proof how ascorbic acid is directly related to this delicately balanced chemical mechanism. In a fascinating description beginning with the early medical records of the 18th century doctor James Lind, Cameron and Pauling trace the breakdown of normal body mechanisms as a result of a lack of vitamin C. Linking the pathology of scurvy to cancer, Cameron and Pauling show how the human organism can convert itself back to a 'generalized undifferentiated cellular proliferation with specialized cells throughout the tissue reverting to a primitive form.' Or as James Lind puts it in his description of advanced scurvy victims with tumors '... all parts so mixed up and blended together to form one mass or lump, that individual organs could not be identified.' Pauling and Cameron maintain that this is the neoplastic, or cancerous condition, and has been proven to occur today in large population groups whose average daily ascorbate intake is insufficient to maintain health.

In addition, Pauling and Cameron provided more proof to decide the importance of ascorbic acid levels. 'In a mass population study carried out in San Mateo County, California, between the years 1948 and 1956, Chope and Breslow found that individuals who regularly ingested more than the recommended daily allowance of ascorbic acid had a 60

percent decrease in age-corrected mortality (from cancer and cardiovascular disease) relative to those with low ascorbate intakes.'

In the light of such information, the importance of vitamin C in general health and resistance takes on incredible significance, and the determination of proper levels of ascorbate seem to be immediately necessary. So far, Pauling suggests that a dosage between one and 10 grams a day is a good range to promote health (This contrasts greatly with the Recommended Daily Requirement of 45 mg. a day set by the FDA). In the treatment of disease, vitamin C carries the same important weight. Cameron and Pauling report that 'so far, there is an overwhelming amount of evidence to suggest that it (vitamin C) is involved in the immune mechanism, in the ability to encapsulate tumors, and many other processes concerned with host resistance to neoplasia.'

Both Dr. Cameron and Dr. Pauling find that vitamin C as a treatment is generally beneficial, and produces significant and even dramatic results in some cases.

"One of the more significant symptoms," said Dr. Cameron, "is in patients with secondary cancer in the bone—a painful metastasis situation; in the great majority of patients, after about five days treatment with vitamin C, the pain has disappeared. That is probably the most dramatic effect that we are aware of. And since we published a bit about that a few years ago, there have been some biochemical studies done in London which confirmed the fact that it does happen." What happens, explained Dr. Cameron, is that the tumor stops growing against the tight inelastic containment of the bone and although the tumor doesn't disappear, growth is arrested and the tumor stops expanding. Therefore, the pain is relieved. According to Dr. Cameron, this has been confirmed by quite a number of researchers. In his characteristically cautious way, Dr. Cameron concludes his explanation by saying, 'I have to say that it doesn't always happen, but it happens often enough to be significant.'

The benefits to health, the relief of pain, all points to the distinct possibility of vitamin C playing an

important role in the treatment of cancer. Dr. Cameron, who has used ascorbate treatment along with regular cancer therapy in his hospital in Scotland, is adamant about this fact. 'There is no doubt that giving vitamin C to cancer patients produces a significant increase in their survival time. Merely increasing survival time is frankly not a very humanitarian objective. But if an increase in survival time is accompanied by an increase in well-being and mental alertness and comfort and dignity, then this is a considerable achievement.'

The work of Dr. Cameron has indeed done some good, not only to the patients in his hospital, but for the studies that he has undertaken with Dr. Pauling in which records of his patients were carefully scrutinized. As we have seen before, conclusive results have been proven, using the records of ascorbate-treated patients matched to those in other hospitals who had not received the ascorbate, but who had similar backgrounds, cancers and treatments. This statistical analysis is what Dr. Pauling and Cameron soundly base their theories on. But part of the trouble with the acceptance of their theories by the medical establishment has been the criticism leveled at them for the way they have conducted their studies.

It seems clear that Drs. Cameron and Pauling have every right to be disappointed in the way that science has regarded the staggering results of the influence of vitamin C—with little support and much suspicion. But these courageous men are not bitter, and are in favor of more testing, wherever it occurs.

But as members of a concerned public perhaps we should be asking if the "testing" is beyond suspicion? For insights into the nature of testing procedures at such places as NCI and Sloan Kettering, perhaps we should keep in mind the "testing" that was done on Laetrile, another innovative cancer treatment, at Sloan Kettering last year. For many years the results of Sloan Kettering's Laetrile studies were not made available, and finally published in an inaccurate form, leading the public to believe that Laetrile had no value whatsoever...If it was not for the courageous efforts of a few members of the SK public

relations staff, and people dedicated to freedom of scientific research, the Sloan Kettering Laetrile cover-up would have been passed unnoticed. Laetrile would have followed the well-worn path to ingomy that so many other nutritionally based cancer treatments had done since the turn of the century. We owe Dr. Pauling and Dr. Cameron, as well as the over 400,000 people who die of cancer in this country annually, our watchful

interest in what goes on behind Sloan Kettering's doors when the medical establishment "tests" vitamin C. Until then we can take courage from the words of Dr. Linus Pauling, as he continues to survive with hardly any funds, but with great insight. "We are continuing to put our main effort into further study in finding out if vitamin C can control cancer. That seems to me to be so important a job that we must get on with it."

Pauling Finally Gets Token Grant From National Cancer Institute

By Robert L. Berko

Over the years Dr. Linus Pauling has submitted to the National Cancer Institute eight proposals requesting grants to study the use of vitamin C as a cancer therapy. Each application was answered with a refusal until this month. Finally Dr. Pauling was awarded a grant of \$70,000-a-year for two years. This, out of NCI's budget of about \$800,000,000 for cancer study is less than they spend for postage.

We feel this "token" grant to Pauling is the result of the exposure of the shabby treatment Dr. Pauling has received from the cancer establishment. Public awareness and pressure are forces bureaucrats understand. We know that his pittance will not silence either Gary Null or caveat emptor. However, in this October 14, 1980 interview (excerpted below) I got the impression that Dr. Pauling now seems unusually reluctant to say anything that would arouse the ire of the NCI or his medical critics.

Berko: Will this new two year grant be enough money to produce results that will prove the value of vitamin C in cancer therapy?

Pauling: Oh no. It's just a start. We will have to make applications for continuation grants. These applications would be much less detailed than for a new grant.

Berko: After being turned down eight times, what do you feel prompted the NCI to approve this application?

Pauling: What happened was that I appealed to the National Cancer Advisory Board. They appointed a committee to investigate. The committee (whose report I have not seen yet) voted to recommend that they either grant the money or that they reverse their previous refusal.

Berko: Since your last interview with Gary Null for this magazine article, I understand that the Mayo Clinic tested vitamin C as a cancer therapy and published a report that was negative. I believe that this test was not done with the protocol you and Dr. Cameron suggested.

Pauling: That's right...They did something different than they said they were going to do. It [the results* did not turn out badly, but it was not a repetition of Dr. Cameron's work.

Because of the nature of the patients that they selected we had predicted that there would be less benefit to the patients than in Dr. Cameron's study...The reason is that Dr. Cameron's patients had not received chemotherapy. It is not used in Scotland for adult patients with ordinary cancers. We had a good reason to say that chemotherapy interferes with the action of vitamin C. The Mayo Clinic people said they would not use patients who had received chemotherapy. But instead they used patients whose immune systems had been badly damaged by chemotherapy. So the results were just as we predicted. Not nearly so much benefit as with Dr. Cameron's patients.

Berko: Does the chemotherapy interfere with the body's immune system.

Pauling: Yes. It destroys the immune system.

Berko: Will the new studies under the NCI grant be with cancer patients?

Pauling: No. This grant is only for research with mice.