

Robert Cathcart, III, M.D., is well-known in orthodox medical circles as the developer of the Cathcart Hip Prosthesis, more than 35,000 of which have been surgically implanted in patients with hip fractures.

Since the late 1960s, Dr. Cathcart has pursued a strong interest in megavitamin therapy and orthomolecular medicine. He was using vitamin E in the treatment of leg cramps before it became popular. He has also been an advocate of the use of vitamin C in the prevention and control of infectious diseases. What distinguishes Dr. Cathcart's approach from others, however, is his reliance on true megadoses of vitamin C and the bowel tolerance concept of determining individualized doses for patients.

Indeed, listening to Dr. Cathcart, one hears of "25-gram colds" and "100-gram colds." He is not shy about recommending upwards of 100 to 200 grams of vitamin C daily to treat viral and bacterial infections. These dosages make Linus Pauling's seem conservative.

It was with aroused interest that we recently asked Dr. Cathcart to discuss his approach to megavitamin therapy and its rationale. We found Dr. Cathcart to be thoughtful, warm, and sincerely interested in

the well-being of his patients. His practice is located in San Mateo, California.

Jack Challem: What made you, an established orthopedic surgeon, turn to megavitamin therapy and orthomolecular medicine?

Dr. Robert Cathcart: I heard about megadoses of vitamin C in 1969, just before Linus Pauling published his book, *Vitamin C and the Common Cold*. At that time, I was lucky if I went two months without catching a cold. I also had hay fever and an allergy to cats. When I heard about vitamin C to treat colds, I started taking it. The first thing I noticed was that it considerably diminished my hay fever symptoms. It was quite obvious that vitamin C was benefiting me, but I couldn't completely understand why. I discussed vitamin C with my medical colleagues, but they thought it was ridiculous. But I knew from how I felt that something was happening. Luckily, I'm more of a scientist than a politician; I don't care about opinions, if facts are contrary to those opinions. It became so obvious that vitamin C was having quite a remarkable effect on me that I tried it on patients. Sure enough, the effect on them was also dramatic. This is what evoked my interest in vitamin C.

JC: The hallmark of your work with vitamin C is the very large dosages you give patients. Dr. Linus Pauling's recommendations seem conservative by comparison.

Dr. Cathcart: The doses relate to my bowel tolerance concept. When many people take high doses of vitamin C, they get diarrhea. Over and over again, I have found that the sicker a person is, the more vitamin

reaches about 80 to 90 percent of bowel tolerance.

This second observation is one reason why vitamin C has remained controversial. Early recommendations were to take two grams per hour. This will help a person with a mild cold. If you have a 25-gram cold, and you're up 15 hours, taking two grams an hour, the symptoms will be relieved. The irony is that physicians don't see 25-gram colds. They see 100-gram colds. Few people would ever see a physician for a 25-gram cold. But I'm sure that many physicians have tried what Pauling recommended, and found that the relatively low dose of vitamin C didn't work for their patients. They would use an inadequate dose and then conclude that the vitamin C didn't work. Well, you don't send a boy in to do a man's job. You need the large doses.

JC: Would you explain in greater detail both the bowel tolerance concept and more about 25-gram colds and 100-gram colds?

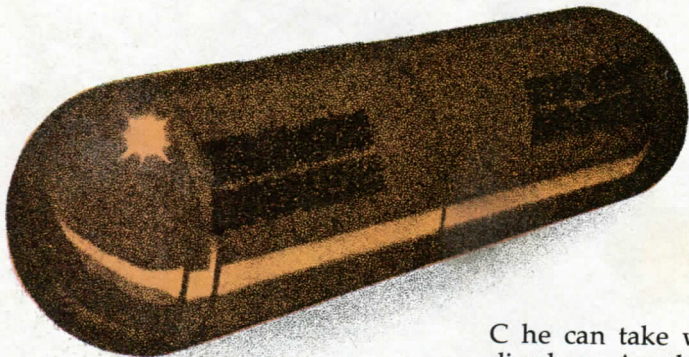
Dr. Cathcart: I discovered that about 80 percent of people can take between 10 to 15 grams of vitamin C as fine granules dissolved in water, divided up four to six times a day, before developing diarrhea. The astonishing thing was that the same person could take 50 grams if they had a mild cold, 100 grams if they had a more serious cold, 150 grams with the flu, or in excess of 200 grams with mononucleosis or viral pneumonia—without diarrhea. This illustrates the bowel tolerance concept. The sicker a person is, the more he can take. The phenomenon is dramatic and invariable. If a person takes vitamin C regularly, he will invariably increase his tolerance when sick. This may not be as obvious to the person who has minor difficulties in taking vitamin C, as with those who cannot tolerate the tart taste. Usually however, I can work with this type of person and help improve his tolerance.

By describing an infection as a 100-gram cold, I refer to a disease that is so toxic that you can take 100 grams of vitamin C during a 24-hour period without it causing diarrhea. If the infection is only toxic enough to allow you to take 50 grams of vitamin C in 24 hours without diarrhea, I call it a 50-gram cold. My prefix of 25-

VITAMIN C STOPS INFECTIONS

By Jack Joseph Challem

and Renate Lewin



C he can take without developing diarrhea. Another factor is that a person doesn't benefit from the clinical effect of vitamin C until he

50-, or 100- indicates the amount you can take at the peak of the disease.

Just because I think of the infection in terms of being a 100-gram cold for the average person, this doesn't mean that everyone can take that amount. On the other hand, if a person begins to take vitamin C with the immediate onset of the symptoms, far less than 100 grams may be needed to block the symptoms. There are a lot of variables, and this is a lot easier to experience than to describe. It's like asking, "How do you know when you're hungry?" A person feels this effect of vitamin C so dramatically that titrating to individual bowel tolerance is not difficult to do.

JC: So the prefix "100-gram" is an indicator of the severity of the disease.

... the relatively low dose of vitamin C didn't work ...

Dr. Cathcart: Yes, absolutely.

JC: Would you recommend that people start taking vitamin C at a high dose and then drop down, or start at a lower dose and build up?

Dr. Cathcart: When you're sick, I think it's a good idea to move up to the maximum dose very fast. This is one of the values of using a physician who is experienced with megavitamin therapy. He can give you direction. If a patient came in with mononucleosis, chances are that he, on his own, would never have reached bowel tolerance early enough to offset symptoms. If I treat a teenager with mononucleosis, I will bring him up to the bowel tolerance level within a day. I would explain the theory to him, and make an educated guess as to how much I think he will be able to tolerate. I would also explain that some people have a brief episode of diarrhea the first time they take high doses of vitamin C. It sometimes takes a day or two for the body to adjust. I think it is related to the bowel flora adjusting to the vitamin C.

Regardless, a patient recognizes

the phenomenon very quickly. If a person takes vitamin C for the first time while sick, he usually doesn't have much trouble with it. The person who occasionally has trouble with vitamin C is the one trying it for the first time when well, or those with touchy stomachs. Those with multiple food and chemical allergies may also be bothered. It is well worth it to push them into using vitamin C because it's extremely help-

ful in controlling the allergies.

JC: I read that you use vitamin C both intravenously and as dietary supplements. How do you choose between the two?

Dr. Cathcart: It depends on the tolerance of the person. With an allergic person who couldn't take it orally, I would use intravenous vitamin C. I prefer to give vitamin C orally.

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JC: You once practiced in Incline Village, Nevada, a small town. Word gets around very quickly in a small town.

Dr. Cathcart: That's right. As a matter of fact, that's a very interesting phenomenon, because it led to many patient referrals. For example, a patient would come in with mononucleosis and hear me talking about 200 grams of vitamin C daily. He would

be surprised initially, go home, talk to the neighbor that referred him, and ask if Dr. Cathcart was crazy. He would be told, "No, he's not crazy. The vitamin C works." So, he would try vitamin C and, sure enough, it would work. The chain reaction reached a point in Incline Village that resembled a critical mass. When a patient left my office, he would run into a person who reinforced what I recommended. This reinforcement

included the local pharmacist, who was often the first person a patient dealt with after leaving my office.

Now, in San Mateo, California, where the number of people who know about vitamin C is rather limited, there isn't this chain reaction or critical mass. Unfortunately, in this more populated area, I've had the experience with people who come in, hear me recommend 200 grams of vitamin C, and seek another physician for further consultation. This other physician, who typically has had no experience with vitamin C, says, "Dr. Cathcart is a quack." Consequently, the patient will be sick for a long, long time. The chain reaction among patients in Incline Village is one of the proofs of vitamin C. You can't fool people in a small town.

JC: Was there any initial skepticism because you were giving vitamin C instead of a prescription antibiotic?

Dr. Cathcart: Sure there was. But patients had the alternatives of either taking vitamin C or driving 35 miles over the mountains to another physician. I guess I was pretty convincing. By this time, also, Linus Pauling had written his book on vitamin C, and there was a willingness to try this approach.

JC: What is the range of bacterial and viral infections that respond to vitamin C?

"... it's extremely helpful in controlling the allergies."

Dr. Cathcart: You should understand that I am not claiming that vitamin C cures all these infections. I think vitamin C suppresses 80 to 90 percent of the symptoms. Vitamin C does this for all the infectious diseases — if you use enough of it. It may or may not be possible to always have this dramatic effect with oral vitamin C, but I have never seen anything less than a dramatic effect when the vitamin C was given intravenously.

The usual bowel tolerance doses are these: for a mild cold, 30 to 60 grams over 24 hours; for a severe

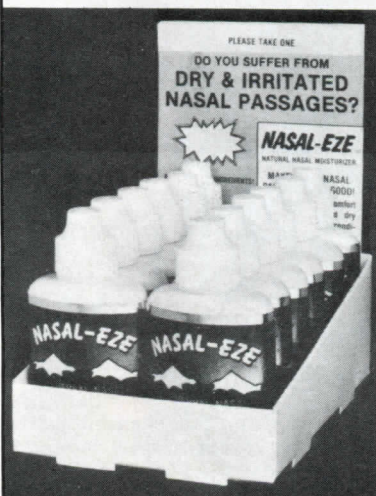
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cold, 60 to 100 grams; for influenza, 100 to 150 grams; for hay fever or asthma, 15 to 20 grams; for a food or chemical allergy, one-half gram to 50 grams; for a burn, injury, or surgery, 25 to 150 grams; for rheumatoid arthritis, 15 to 100 grams; and for infectious hepatitis, 30 to 100 grams.

JC: Do I detect a subtle difference between you and others who feel that vitamin C does more than just suppress symptoms, that it is virucidal or bactericidal?

Dr. Cathcart: I don't think there is much difference in our approaches. If you use a high enough dose, vitamin C is often virucidal. This is difficult to know for sure, because I tend to not use vitamin C intravenously. I prefer to give it orally to a patient's bowel tolerance. I think that vitamin C is more virucidal when given orally, but I can't be sure.

If you come to me with a cold, I don't know whether the cold is going to last two days or 15 days. If you start taking huge doses of vitamin C and suddenly get well, how can I fairly conclude whether or not it was virucidal? There are some viral diseases I have not been able to completely stop with vitamin C, but the symptoms were suppressed. For instance, in some of the forms of flu the vitamin C blocks the symptoms; but if you stop the C, the symptoms appear again. Under these circumstances, you should take it until you feel better. That's usually the point at which you can stop the vitamin C and the infection won't return. With bacterial infections, I have seen people who have taken vitamin C and gotten well immediately. But at this state of knowledge, I recommend an appropriate antibiotic.

The point I like to make is that vitamin C prevents complications and increases the spectrum of the antibiotic. I've also found that vitamin C, when taken in sufficiently high doses, tends to stop most allergic reactions to antibiotics. An induced vitamin C deficiency is why many people have allergic reactions to antibiotics.

JC: Would you explain the disease anascorbemia?

Dr. Cathcart: "An" means without, "ascorb" is ascorbic acid or vitamin C, and "emia" means of the blood.

There is a state of induced scurvy in diseased tissues. If you have a sore throat, then you have induced scurvy in the throat, not all over your body—at least, not initially. But the infection rapidly induces anascorbemia. White blood cells draw on the vitamin C from the rest of the body, and deliver it as long as they can to the diseased area. If the infection lasts long enough, then it causes a systemic deficiency of vitamin C. This is why many people, as they are getting a cold, start getting better—but get sick again a couple weeks later. Many diseases develop as a

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person is getting well from another disease. This, I feel, indicates a scorbutic situation. Another hallmark of my work would be to say these diseases are induced by the primary disease, when vitamin C is taken from the body by the stress. You might be able to survive on the Recommended Daily Allowance of 60 milligrams, if everything is all right. If you get sick, this is not enough. You'll develop secondary complications induced by the depression of vitamin C in the body. All of the known, noncontroversial biochemical functions of vitamin C are put at risk by this induced deficiency.

JC: While on this subject, what would you recommend for the average adult as a maintenance dose?

Dr. Cathcart: This is a very difficult question to answer—more difficult than treating people when they're sick. I think between four to 10 grams would be a good maintenance dose. I should mention that there is a physiological dependency that occurs when you take vitamin C in very large amounts. I'm not sure where the breaking point is, but I suspect it is around 10 grams a day. If you take more than this for a long period of time, and you feel good on this high maintenance dose, you won't feel good if you suddenly stop taking it. This is more true of allergic

patients. Part of the reason why they might not feel good is because their symptoms return.

JC: Wouldn't there be a danger when someone goes into the hospital?

Dr. Cathcart: This is a great danger. And it is silly because there is no danger with vitamin C per se. The danger is that the physician who is against vitamin C, and doesn't know about vitamin C, takes the patient off vitamin C suddenly—during a period of greatest need, at the time of hospitalization.

JC: How can one respond?

Dr. Cathcart: I think that the resistance to vitamin C was so great that we had to go public with this knowledge and not limit our discussion to only scientific circles. As the number of people who use vitamin C continues to increase, and there is more and more talk about it, the physicians will be convinced. You've got to understand that physicians are in a terrible position from the legal standpoint, and this explains part of their reluctance to use vitamin C. The risk of getting sued for malpractice is greater when a new approach is being used, and vitamin C is considered a new approach. The primary goal in medicine has had to become not getting sued; taking care of patients has become secondary. You can't expect the average physician to do something new, when there is a great risk of malpractice—even when vitamin C is so safe. If it wasn't for the fear of malpractice, vitamin C would have been accepted by physicians a long time ago.

JC: Are you finding yourself treating patients nutritionally for the same conditions you would have treated surgically or with drugs 10 or 15 years ago?

Dr. Cathcart: Absolutely. There is no question about this. We get into the approach of orthomolecular medicine when you ask that. Most of the diseases I referred to don't require surgery, anyway—you don't do surgery on viral diseases. I have occasionally found patients with an abscessed tooth who, after taking vitamin C, didn't have to see the dentist. Vitamin C seems to suppress the symptoms in some forms of arthritis, which is sometimes dealt with surgi-

cally.

There are often other substances lacking. Let's say that a person has back pain because of a manganese deficiency. Or they have back pain from a deficiency of EPA, which is one of the essential fats found in cod liver oil. In these cases, manganese or cod liver oil work better than vitamin C.

Vitamin C, on the other hand, because it increases the secretions and functions of the adrenal glands, will often block a portion of the discomfort from back pain. If a person uses vitamin C, he may not need surgery on his back. If he hadn't used it, the vitamin C deficiency may have been severe enough to necessitate surgery. By supporting adrenal gland function with vitamin C, a patient becomes more tolerant of the pain.

JC: You are known for designing the Cathcart Hip Prosthesis. Have you found it to be unnecessary when vitamin C is given to patients?

Dr. Cathcart: The prosthesis is for a fracture. If a person takes vitamin C all of their life, I think their bones will probably be stronger and more

“... vitamin C is often virucidal.”

resistant to fractures. Once the fracture occurs, however, surgery is necessary.

JC: You have embraced the whole of orthomolecular medicine—megavitamin therapy and the treatment of food and chemical allergies. Could you describe your progression to this extent?

Dr. Cathcart: Because of my work with vitamin C, I was asked by a Sacramento physician, Gary Gordon, to give a talk on television. I did, and I saw what this other physician was doing. He was using chelation therapy, and he invited me to go to a conference sponsored by the Northwest Academy of Preventive Medicine.

My first impression of the group was that these doctors were crazy. I almost left the meeting, but I stayed and listened. They were talking

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about some of the symptoms and case histories I had observed in patients, but all those things that my colleagues thought were odd. I started trying some of these alternative approaches, and they began to help patients. Then I started to read some of the books by outstanding physicians and psychiatrists in orthomolecular medicine. I began using some of their approaches. They worked, also. This was quite a few years ago, and in my relative isolation in Incline Village, I continued to incorporate new elements of the orthomolecular approach.

One of the things you find when you are practicing orthomolecular medicine is this: you give a patient zinc, for example, for one thing and he comes back in and says, "Not only did zinc cure this problem, but something else improved." When a patient comes in with that something else, you're likely to try zinc for that. Sometimes it would work.

Incidentally, I have found zinc to be critical in the healing of herpes infections and sometimes teenage

acne. Teenage acne sometimes responds very rapidly to zinc, but adult acne is more questionable. The unsupervised use of extremely large doses of zinc could be dangerous. This is such a new field that you can't help but discover new things if you use the nutrients in large enough doses. One of the problems, again, has been that physicians use these nutrients in such small doses that there is no pharmacological effect. It's only when you take these nutrients in large doses that you break through the metabolic barriers the diseases raise. Only then will nutrients have therapeutic effects.

JC: I want to pursue your comments about herpes. This is a disease that is virtually epidemic in scale, and everyone throws up their hands in frustration trying to treat it.

Dr. Cathcart: There is no question that if you get rid of patients' junk food habits, and supplement their diets with zinc and vitamin C, the vast majority can get over the infection. The causes of many diseases

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involve natural substances. If you play only by the conventional rule that "thou shalt not investigate the natural substances of which you are made, but investigate the synthetic substitutes that are profitable to the drug companies," this will guarantee that you will probably not solve the problem. If you do appear to solve it, you'll have complications because the synthetic substances never work as well as the natural ones, a deficiency of which was the original cause of the disease. Orthomolecular medicine provides a much better alternative.

JC: If you have a typical approach to treating herpes in patients, would you describe it?

Dr. Cathcart: With either herpes I or II, the simplex or genital variety, I get them off all sugar and processed foods; I supplement their diets with zinc and vitamin C; and explore the possibility of allergies. I have to be a little careful about zinc, because if too many people get enthusiastic about it, other problems could

appear—such as suppression of other minerals like manganese and copper. In orthomolecular medicine, we face a dilemma. There may be some dangers in recommendations, but there are greater dangers in not recommending them. I would never give a patient just zinc. I always give a multivitamin and multimineral supplement along with zinc. This protects the patient against induced deficiencies. The multivitamin and multimineral supplements shape up other deficiencies that may be less readily diagnosed. One of the reasons why vitamin C is so good, other than the possible dependency I mentioned, is because there are no surprises. The long-term effects of vitamin C are beneficial.

JC: You distinguished between teenage acne and adult acne. My impression is that adult acne is becoming more common.

Dr. Cathcart: Yes, it is.

JC: What do you see as the cause of and treatment for it?

Dr. Cathcart: Part of the cause relates to the fact that we are seeing a lot of new diseases. I think that junk foods, additives, and the chemicals around us are causing T-cell suppression. T-cells are thymus gland cells that support the immune system. Their suppression results in a variety of symptoms. It is not any one of these junk foods or chemicals—it's the sum total of the toxins we are taking into our bodies. When they cause various depressions in body functions, a person can be in grave difficulty. He becomes extremely sensitive to certain substances, chemicals, and foods that we diagnose as allergies.

"White blood cells draw on the vitamin C from the rest of the body . . ."

JC: It's as if the body has to fight on all fronts at the same time.

Dr. Cathcart: That's right. When the Environmental Protection Agency, for instance, establishes the allowable amount of lead that a person can be exposed to, the amount is based on what will kill half of a group of lab animals. They call this the LD-50, for lethal dose of 50 percent. The EPA uses a formula to convert this to one they feel is appropriate for humans. The problem is that they are not taking into account the combined effect of lead, chlorine, malathion, gas exhausts from home heating, plastic migrating from cups, fumes coming from various other things, and the thousands of other chemicals we are exposed to. Also, they do not consider specific allergies to these substances.

JC: Cumulatively, then, the LD-50 might occur at a lower dose.

Dr. Cathcart: Yes. Some people are probably getting a lethal dose from combinations of chemicals. By this, I don't mean they are immediately dying. A person may develop cancer, or have a heart attack, or their immune system may flip out in such a way that they get lupus. We generally don't recognize what the cumulative effects of all these chemicals

are. But I think one of the ways these chemicals and toxins act is by suppressing metabolic processes that involve vitamin C and other nutrients. Some insurance is afforded by taking large amounts of certain nutrients, especially vitamin C.

JC: Where do you see orthomolecular medicine going in the next two to three years?

Dr. Cathcart: I think it is in a tremendous growth period. More physicians are becoming interested in orthomolecular medicine, and there is more basic research proving our theories to be correct. Personally, I think all of orthomolecular medicine is going to ride in on the coattails of vitamin C—the vitamin is so effective when properly used! A lot of orthomolecular medicine has to do with the treatment of a person's biochemical individuality. The net result of biochemical individuality is that sometimes one nutrient will work for a condition, and sometimes it won't in another person—because the problem is not caused by the same deficiency.

In treating a virus, you're dealing less with biochemical individuality. The virus causes the same type of difficulty in everyone, and the major difficulty is it induces a deficiency of vitamin C. The virus accomplishes its effect by a common pathway of vitamin C suppression. If you consume more vitamin C than any virus can handle, then it will be overcome. I think that it's practically the same situation with a bacterial infection.

JC: Is there anything you would like to discuss that I haven't asked about?

Dr. Cathcart: There are many noncontroversial functions of vitamin C. Any biochemistry textbook lists all the noncontroversial things vitamin C does. These include the making of collagen tissue and dentine, proper functioning of the immune system, mobilization of white blood cells, proper blood coagulation, the metabolism of certain amino acids, the production of interferon, the adrenal glands' ability to make adrenalin and cortisone, and the protection of adrenalin so it doesn't become toxic adrenochrome. The body can't do any of these things without vitamin C and, in these respects, it remains

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noncontroversial. The argument is that the body doesn't need very much to do all these things. This may be true in the normal and unstressed person. I point out that vitamin C is burned up by stress. If

“ . . . it increases the secretions and functions of the adrenal glands . . . ”

you have five grams of vitamin C in your body, which is a pretty good amount, a 100-gram cold will quickly burn that up. The only way you can keep your body from becoming depleted of vitamin C when you are stressed or sick is by taking doses that are far beyond the range of the Recommended Daily Allowance.

The reason for this occurred about 60 million years ago when the higher primates lost the ability to produce vitamin C in their livers. We lost the

ability to make it, but we didn't lose the ability to use it. The animals that were evolving at that time must have had compensatory mechanisms, or else they would not have survived as a species. While it would have been nice to continue making vitamin C, we were able to survive by getting it from dietary sources.

Now, we are interested not so much in the survival of the species but the *quality* of the survival. If we mobilize some of these dormant functions, we do better. By taking vitamin C, we are reactivating the metabolic processes that have been lying in wait for 60 million years. We can do some amazing things with vitamin C. Vitamin C is probably going to cause a greater revolution in medicine than antibiotics did. It has a destiny that cannot be stopped.

JC: Thank you very much, Dr. Cathcart. □

EDITOR'S NOTE: We do not endorse any particular treatment regimen. We recommend consultation with your family physician.