A Special Interview with Dr. Ronald Hunninghake about Vitamin C
By Dr. Mercola

DM: Dr. Joseph Mercola, DO
DH: Dr. Ronald Hunninghake

DM: Welcome everyone. This is Dr. Mercola. Today, I’m here with Dr. Hunninghake who is an expert in vitamin C. He’s a physician. He has personally supervised over 60,000 intravenous vitamin C administrations.

Actually, we’re fortunate to find him because he just came back from a conference study sponsored in Japan on vitamin C. He truly is an international expert in this area. I’m just delighted that he’s able to spend some time with us today and really enlighten us about an important modality.

With the advent of many of these newer antioxidants, I think it has somewhat taken a backseat but certainly vitamin C is the grandfather of the traditional antioxidants that we know of.

Welcome to our call today.

DH: Thank you Joe.

DM: Can you give us a bit of a background of your professional history and how you got interested in vitamin C and how your journey in that process has occurred and what you’re doing with it now.

DH: I’m a family physician. I’ve always been interested in health and wellness.

About 22 years ago, I joined Dr. Hugh Riordan, who after Linus Pauling and Ewan Cameron, did the initial research on I.V. vitamin C for cancer patients. The Mayo Clinic reportedly replicated their study. Of course they did not give it intravenously, they just gave oral vitamin C. They were not able to get the outstanding results that Pauling and Cameron got in their study on cancer patients.

So there was a long controversy and then Pauling died. So Dr. Riordan pretty much took up the flag and carried on a 15-year research project called RECNAC which is cancer spelled backwards. He was able to do some of the initial groundbreaking research in cell culture showing that vitamin C was selectively cytotoxic against cancer cells.
We then embarked upon a whole series of patients who had either stage 3 or stage 4 cancer. I.V. vitamin C was found to be very beneficial. It’s not considered a stand alone therapy for cancer but it’s a perfect adjunct to any kind of therapy that the cancer patient is receiving at this time. It will reduce side effects and improve quality of life. There has actually been two major studies now showing how it improves quality of life.

DM: Interesting. I didn’t realize you really have taken up the banner that Dr. Pauling started who is well recognized as really the leader and the innovator and founder of the interest in vitamin C - ascorbic acid. You really followed in his footsteps.

With the Dr. Pauling’s work, he’s really known for two points which is really the treatment of cancer but also the treatment of infectious diseases specifically viral upper respiratory infections like cancer. In your work there, are you primarily focusing on the use for a cancer adjuvant or do you also use it for infections?

DH: We use it for just about everything. Certainly, anyone that’s got a cold or a flu or chronic fatigue or any chronic viral infection, we do use that. We had our first Riordan IVC and Cancer Symposium last year. Dr. Tom Levy was our keynote speaker. Of course, Dr. Levy wrote *Curing the Incurable* which is a fantastic book about vitamin C infectious disease and toxin control. So certainly, I.V. vitamin C works very well for infectious diseases as well as cancer.

DM: We just recently posted an article on our newsletter that received quite a bit of notoriety last year with the swine flu epidemic of an individual believed in Australia or New Zealand who came down with terminal swine flu. He was diagnosed and really given a few days or weeks to live. I think actually he contacted Dr. Levy. He was given I.V. administration of vitamin C and actually recovered from it quite nicely.

DH: It’s definitely a very under utilized modality in infectious disease. It’s really a premiere treatment for any chronic infection. Again, it’s not typically recognized by conventional medicine.

DM: The vast majority of the people watching this or listening to this are not physicians. There is really two primary ways you can administer vitamin C; one is orally and the other is intravenously. Obviously, he uses a lot of intravenous. If you’re using the intravenous approach you really have to be a healthcare clinician and licensed in some way to be trained and certified to be able to do that. Maybe you can expand on those different approaches for us.

DH: For the average patient, I’m certainly going to encourage them to continue taking at least the Linus Pauling dose which is 1 gram twice a day of vitamin C. Certainly you can do more than that. If you’re suffering from chronic infections or chronic fatigue you can go ahead and gradually increase your dose up to what’s called the bowel tolerance dose. It’s very safe.
The whole idea that vitamin C causes kidney stones, we have completely disproven that. I’ve often told patients if that were true, we would be the kidney stone capital of the world here in which throughout Kansas, there as many I.V. Cs that we give and as much vitamin C as we recommend. There have been several studies by urologists that have shown that that is just simply not an issue with high dose vitamin C.

For the typical patient oral is fine but if you really have a serious illness, you should think in terms of doing intravenous vitamin C from a practitioner because it can greatly amplify and change the benefits of I.V. vitamin C.

DM: What are the typical doses you find intravenous vitamin C that are administered?

DH: My talk over in Japan last week was the Riordan IVC protocol. In that protocol, we recommend a patient who has never had vitamin C intravenously -- first of all, we recommend that people get a G6PD (Glucose-6-phosphate dehydrogenase) level. The reason for this is that’s an enzyme that the red blood cells need to maintain the integrity of their membranes. What people don’t understand is that high dose intravenous vitamin C is a strong pro-oxidant.

A pro-oxidant in a G6PD deficient patient can cause hemolysis of their red blood cells. So using I.V. vitamin C is not for just the novice. I think you should be going to an experienced practitioner who is using at least the Riordan protocol or some kind of protocol that’s going to make sure that they use the vitamin C intravenously in a safe manner.

DM: This G6PC deficiency is relatively uncommon.

DH: It’s relatively uncommon.

DM: It’s not something like every other person has.

DH: No. You’re talking more about Mediterranean decent, African decent patients. Even then it’s pretty rare. We did a series of over 800 G6PDs and we only saw four deficiencies. And of those four, we were able to give 15 gm I.V. vitamin C. However I do have knowledge that there have been practitioners who have given a 15 gram I.V. vitamin C and the patient did experience hemolysis. So from a medical-legal perspective, it's best to do a G6PD before embarking upon (indiscernible 9:24)

DM: In your experience, less than one person to a hundred which is -- so the odds are you’re not going to have it. To be comprehensive, you really need to do that. The doses that you’re using is about 15 grams do you ever go higher to 25 maybe 100?

DH: That’s the starting dose. What we found, what the Riordan’s research found was that a blood level of around 300-350 was necessary to have this selective cytotoxicity. Since then we’ve probably geared that down a little bit. Maybe even as much as 250 mg per dl is going to be sufficient to have an anti-cancer effect.
Now just to put that into perspective for the average person, if we were to measure someone off the street, their blood level would be about 1 mg per dl if they’re eating a fairly decent diet. If they’re less than 0.6 mg per dl, they’re into a scurvy type range of vitamin C.

But what we’re talking about for a post-IVC saturation level giving let’s say 25 to 50 grams of vitamin C I.V. over about a 90-minute period. It’s something in the 200 to 300 mg per dl range. So we’re talking about 200 to 300 times the normal amount of vitamin C that your blood normally experiences just eating a balanced diet.

**DM:** These extraordinarily high types of levels are really mostly indicative for the treatment cancers and infectious diseases, is that correct?

**DH:** That’s right because when you get into these, as you said, extraordinarily high blood levels what happens is vitamin C which will always be an antioxidant nevertheless starts to have a pro-oxidant effect. This has been documented at NIH in two studies.

As a matter of fact at our second annual Riordan IVC and Cancer Conference, we had Dr. H. Chen who was the author, along with Mark Levine, on high dose vitamin C as a source for creating hydrogen peroxide in the extracellular space surrounding tumor cells.

It’s thought that it’s this hydrogen peroxide or pro-oxidant effect of vitamin C that’s actually having the anti tumor property as well as it’s that same pro-oxidant effect that’s in fact, helping the body get rid of infectious disease.

**DM:** In your experience in using it for these conditions, what are some of the more dramatic examples that you’ve seen over the last 20 years? As you mentioned earlier, you’ve given over 60,000 doses of I.V. vitamin C. So I’m sure in over 20 years you’ve seen quite a few dramatic recoveries. There is no way you would still be doing this over two decades if it wasn’t effective.

**DH:** Yeah, Dr. Riordan’s very first case was a stage 4 renal cell cancer that had metastasized to the lungs. Basically, the oncologist had said there is nothing else we could do, go ahead and get your things in order. That’s when the patient had read about Linus Pauling’s research and so he came to Dr. Riordan and Dr. Riordan went ahead and started giving him -- he started out with the 15 grams but he moved him up to 30 grams twice a week. And after two years, actually, it was after one year, the metastasize were completely gone.

The oncologist called him up and asked him what had he done because he had never seen a stage 4 cancer go into remission. We’ve actually had very good success with renal cell bladder cancers and lymphomas. Those types have been very effectively treated with I.V. vitamin C.
DM: I just want to go back to a basic supposition and really address many of the skeptics who will be viewing this and say, I don’t believe you. Dr. Linus Pauling actually won two Nobel Prizes; one was in science and one was for peace. But he really should have won three because he really almost won the Nobel Prize for discovery of DNA so he should have had three.

DH: That’s right.

DM: I mean, he really was a brilliant man. He wrote the book about vitamin C. He was just castigated in the public. There are many people, scientists, who kind of used a variety of ammunition to discount what he said even though he was clearly a genius.

You could comment on why this approach hasn’t been adopted. You’ve been getting some measure of success. Why hasn’t conventional medicine caught on to this. Why aren’t they using it more? What is the limitation, the confounding variables that’s preventing people or physicians and clinicians and researchers from adopting this more widely?

DH: I’m sure there are several factors here. Number one, most people think of vitamin C as, it’s a vitamin. You define vitamin as a trace amount of a substance that you need to prevent scurvy for instance in vitamin Cs sake. But what we’re talking about here is something in a pharmacologic range.

The way to really understand vitamin C is to go back to the writings of Irwin Stone who wrote The Healing Factor which was a fantastic book written in the 70s about vitamin C. He points out that every creature when they are sick, they greatly increase their liver or their kidney’s production of vitamin C — humans, primates, and guinea pigs have lost that ability. We still have the gene that makes the L-gulonolactone oxidase enzyme that converts glucose to vitamin C but it’s non-functional. We have to get our vitamin C from the outside.

We have to get it as food. When we give it I.V., in a sense, what we’re doing is recreating the liver’s ability to synthesize tremendous amounts of vitamin C. I’m not sure how much humans can synthesize. I do know goats, when they are severely injured can take what would be a normal synthesis of about 2000 mg per day.

If you were comparing their weight to an adult human, it would be about 2 gm a day when they are well up to as high as 18 to 20 grams a day when they’re sick, severely sick or injured or infected or stressed.

So I always look upon high dose vitamin C as nature’s way of dealing with crisis in terms of one’s health. This notion however does not exist in the conventional thinking in the medical mind.

My son who is a second year medical student has had very little if any discussion of nutritional therapies. The only reason he knows he’s had a little bit is because one of Dr.
Riordan’s students, Dr. Jeanne Drisko who is also doing I.V. vitamin C research is at the University of Kansas. There are more people aware of utilizing I.V vitamin C for cancer there probably than any other medical school in the country. So he has heard of it in his medical training. But other than that, there is no other nutritional training that he’s gotten so far.

**DM:** I guess this lack of appreciation that humans have lost the ability to make vitamin C. If we had that ability like many animals do, we would generate really high levels under certain conditions where we were exposed to these stressors that require the benefit from the vitamin C. So that’s the primary reason.

**DH:** There are other factors involved here. There are financial factors. I mean the standard oncology treatments are extremely expensive. I.V. vitamin C relatively speaking is very inexpensive. So the notion that something that is non-toxic and that has -- there is no FDA indication for I.V. vitamin C. Oncologists are reluctant to use what they consider to be kind of a pop culture type of approach to cancer.

Again, cancer is a life threatening disease. But what they forget is that most cancer patients are depressed. They are in pain. They have tremendous fatigue and depression. These are all signs of scurvy. If you actually measure vitamin C levels in cancer patients especially advanced cancer patients, they’re all below that 0.6 mg per dl level that I was talking about.

One of the things that I.V. vitamin C does is it immediately relieves their scurvy symptoms. So they start having a greater sense of well being. They don’t need as much pain medicine. Their appetite improves. Their mood improves. They have a better quality of life.

This was recently replicated in a Japanese study that was reported on over in Japan at this symposium that I was at that cancer patients who get I.V. vitamin C, improved quality of life in all the various statistical measures that you can look at.

**DM:** It sounds like another component that really is somewhat obvious if you think about it is the economics of the situation too. Oral vitamin C is really inexpensive but there are very few people who will be able to go over 10 grams due to bowel tolerance issues maybe 20 at the most. So that’s going to cost a few dollars.

But even I.V. vitamin C is relatively inexpensive. When you consider the cost of the traditional of oncology patient, I don’t see those patients and you do. You could perhaps give us a better idea but my understanding is that we are talking hundreds of thousands of dollars typically. Many of these medications are tens of thousands of dollars a month to give to these patients. That’s a massive industry. There is all these incentives to perpetuate the type of intervention because there is massive amounts of profit to be made from people promoting that.

**DH:** That’s right.
DM: No one is making money from vitamin C.

DH: That’s right. The way we’re trying to position I.V. vitamin C is that it’s an excellent adjunct. Dr. Chen presented two weeks ago at our symposium. She presented amazing research showing that in pancreatic cancer patients if you give them just Gemzar alone which is one of the standards of therapy there. There is a slight improvement but nothing very dramatic.

Vitamin C alone will show a significant improvement in pancreatic cancer cells in terms of knocking out tumor cells. But if you combine the two, vitamin C and Gemzar together there is a clear synergistic benefit to the two together. As well as if they gave it to patients which we know, we had a pancreatic cancer patient survive two and half years doing I.V. vitamin C. The typical survival time of a standard pancreatic cancer is three to six months at best.

DM: Probably three.

DH: Three is more typical if they’re lucky. Plus, the I.V. vitamin C greatly improves quality of life, reduces side effects from chemotherapy, and does not interfere with chemotherapeutic agents even though that is a common misunderstanding.

That’s another reason why oncologists, do not normally recommend vitamin C is they have this idea that the antioxidant effect of it is going to interfere with radiation or chemotherapy.

DM: I like to transition into more of the typical consumer questions that we have because most of this is really more for professionals. But on the other hand, between one in two; one in three people viewing this are going to be either themselves personally or know someone who has cancer. It’s not an insignificant question. Really understanding that this could be a very helpful therapeutic modality is important to know.

If someone has been inspired and curious to integrate this into either their own cancer program or someone they know or one of their family members, what would you suggest to them to do to acquire more information so they can implement this type of program?

DH: We actually have the Riordan IVC Protocol on our website at www.RiordanClinic.org. So they could go there. Plus, we’ve got all of our research articles on that same website so they can start looking at the research.

I’ve done a video on how vitamin C fights cancer at www.HealthHunterOnline.org that’s very good.

DM: That’s spelled just the way it sounds, health hunter?
**DH:** Health Hunter Online dot org. Click on free video and they can watch a very detailed explanation of how high dose vitamin C has a pro-oxidant effect and can be very beneficial in treating the cancer patient.

**DM:** Okay, great. Thank you for that. I’m sure many people are going to be interested in integrating that program.

**DH:** At that same website, Dr. Glen Hyland who is an oncologist that’s been consulting here at our clinic for several years did a very nice lecture entitled; *IVC, Chemotherapy and Radiation - Are They Compatible?* He does a compelling job of showing that not only are they compatible but they are synergistic.

**DM:** That’s so awesome. Thank you for compiling that and offering those resources. That will be very helpful. I like to focus more to the oral version and what many people do. It’s probably one of the most common supplements that people are using is vitamin C.

As you alluded to, many times you’re just simply unable to achieve the high levels in the blood that’s necessary if you take oral. But there is a new version, I actually learned about it first from Dr. Thomas Levy who is clearly one of the leaders in this area and that is liposomal vitamin C.

I’m wondering if you can address that because his experience to me is that you tend to bypass many of the complications of the traditional vitamin C or ascorbic acid and are able to achieve far higher intracellular concentrations that in his case seem to be comparable to the effects of intravenous vitamin C.

**DH:** I’ve talked to Tom about this at quite some length. As of yet, I don’t see the proof yet. I went ahead and got a case of liposomal vitamin C myself and took my dose up to 34 grams a day using it.

One thing I can tell you is that it’s amazingly well tolerated. But it does not raise the blood level all that much. I’ve talked to Tom about this and he says, it may not raise the blood level that much but it does not require the (indiscernible 14:12) transporter to get the vitamin C into the cell so it just passes right on in intracellularly.

I’m all in favor of people trying this. I think it can be used as an adjunct to I.V. vitamin C. Most people are only going to do I.V. vitamin C once or twice a week. So by doing the liposomal vitamin C, they can easily do 6 grams of liposomal vitamin C orally without a bit of gastrointestinal distress.

**DM:** It’s interesting to hear your feedback on it. It’s certainly more convenient. Not many of us are going to want to enjoy having a needle inserted into one of our veins twice a week. Ascorbic acid can be relatively damaging to the veins. I mean there is no question.
DH: That’s not true.

DM: Not that, I mean, irritating is what I mean to say.

DH: I’ve given my wife over 350 I.V. vitamin C infusions because she had breast cancer about 12 years ago. I’ve used the same vein for over 12 years without any (indiscernible 15:20) or difficulties. You have to make sure that the company that you’re getting your vitamin C from has properly buffered it. Ascorbic acid, if it was an acid type of substance which it could be if they do not buffer it properly then yes, you could get some damage to the endothelium of the veins.

DM: Just to finish up the discussion on liposomal because I didn’t really mention what that is for our viewers who have not been exposed to it before. Essentially, it’s something like an egg yolk where you have this phosphate bond that’s attached to the vitamin C because of that you get much better absorption. So that’s why you tend not to see the diarrhea that you normally would because it’s not in the gut causing this osmotic diarrhea. That’s one reason.

The thought is that once it’s attached to this phosphate it just really bypasses -- goes straight from the blood into the cells. That’s why you may not see the higher blood values that you did seek to objectively document. It’s interesting to know because you’re clearly one of the leaders in the field. From your perspective it’s still somewhat unproven but certainly not dangerous.

DH: I would recommend it. There are other forms of vitamin C out there now. There are new forms of sodium ascorbate that are buffered that can be -- like I take 12 grams everyday first thing in the morning and I have no GI upsets.

Part of it too you have to kind of get your gut in shape to vitamin C. Not everyone needs to take that amount but high doses of vitamin C does improve your immune system. It supports adrenal function. It definitely can improve endorphin levels. There is a lot of benefits to vitamin C just to general health.

DM: I wonder if you can comment now on some of the specifics of the oral forms that are available. There are a number of people primarily with the naturopathic perspective who believe that it’s not just the pure vitamin C, the ascorbic acid. But it’s the combination of the ascorbic acid with its associated micronutrients that one would find in nature, bioflavonoids and all the other components. It’s a synergy taken together that is more effective.

DH: There is no question that would be a better way to go. Any time you can do more like food, you’re going to be better off. I think people sometimes get the mistaken understanding that supplements are better than food. I think food is still the essential thing that your body needs in order to get optimal cellular functioning.
But when you’re sick, you can use trace nutrients in orthomolecular doses to achieve effects that you can’t get from just food alone. But in general, for people who are healthy, who are wanting to stay healthy, I would recommend using vitamin C that’s got bioflavonoids and other co-factors associated with it.

**DM:** Do you have any specific favorites that you like or any specific bioflavonoid combinations that you have found useful over the years?

**DH:** None that I can specifically think of. I mean, I just tell people to eat a really good whole foods colorful diet and you’re going to get a lot of bioflavonoids that way and carotenoids. The more colors, the better. That’s where you get the phytonutrient synergism that can be very effective in maintaining health and keeping the cell in a balanced state of redox.

**DM:** One of the other uses of vitamin C, and I want to talk about some of the conditions that you found helpful aside from infections and cancer, would be the indication of bruising or easy bruisability, capillary fragility. Typically, that’s not just vitamin C. It’s the associated bioflavonoids that are useful there.

One of the other conditions and side effects you can have if you have this tendency is you could actually be far more easily predisposed to hemorrhoids because that’s sort of a complication. So they go hand in hand. If you have easy bruising you’re likely going to have an external or internal hemorrhoid. What have you found to be useful for this therapeutically?

**DH:** Once again, I think we probably put every patient that we see on vitamin C. I myself in medical school had trouble with hemorrhoids until actually got on vitamin C. I would have bleeding hemorrhoids and bleeding gums. So top and bottom were bleeding so that tells you that I was vitamin C deficient all through medical school and through the early years of my practice.

But in the last 20 years, my gums don’t bleed and I don’t have hemorrhoids and I take a lot of vitamin C.

**DM:** Do you take the bioflavonoids too?

**DH:** I take grape seed extract regularly. I usually take quercetin but I don’t take a bioflavonoid mix per se. It would probably be a good idea but I don’t take that.

**DM:** When I reviewed this for a friend who had this problem I found that rutin seem particularly useful.

**DH:** Yeah, rutin would be. I agree. That would be excellent.
DM: Rutin by itself, not to diminish the importance of the need for vitamin C but rutin by itself I think can reverse the bruising and the tendency towards hemorrhoids. This is a little hint that I learned. It seemed to work well for the person I recommended it to. We talked about the kidney stones which is clearly an issue and the dosing as we discussed earlier too.

DH: There is an interesting thing about dosing, you know, Mark Levine published this study where he basically said that there is no need to take anymore than about 220 mg a day of vitamin C because it’s just going to go out.

Dr. Steve Hickey who has written a book called Ascorbate has shown that if you take vitamin C frequently throughout the day, you can achieve much higher plasma levels. So even though the kidneys will tend to rapidly excrete the vitamin C. If you’re dosing it every hour or two, you can maintain a much higher plasma level than if you just dose it once a day unless you have an extended release form of vitamin C.

DM: That’s a good point. It kind of leads me to my next question. We have many people who wrote in asking about this which is Ester-C. I’m sure you’ve got some views on that. So if you can share that with us.

DH: It’s a buffered form of vitamin C. Generally, a lot of people who can’t tolerate vitamin C, they really can’t tolerate ascorbic acid. The ascorbic acid tends to disrupt their gut in such a way that they get gastrointestinal distress.

Ester-C is better tolerated because it is buffered and it seems to be that the vitamin C derivatives that are used to make that stay in the blood stream longer than just straight ascorbic acid.

DM: I have some concerns about Ester-C. Perhaps you can revise my concerns or address them. Just for a basis of understanding for our listeners and viewers, is that, vitamin C is an antioxidant because it’s an electron donor and it only is doing that if it’s in the reduced state. If it’s in the oxidized state, it doesn’t really work well. There are rejuvenators like co-enzyme Q10 in the system that will re-oxidize or reduce it so that it can donate electrons again.

My understanding is that most of the Ester-C is oxidized and not as beneficial. I’m wondering what your experience has been.

DH: There was a study at Sloan-Kettering a couple of years ago looking at the effects of dehydroascorbic acid on cancer cells. It was a negative study. Basically, to me, it was a big duh. I mean, I would not use an oxidized form of vitamin C.

Now, the idea that Ester-C is an oxidized form of vitamin C is new information to me. I did not know that.
DM: That’s why I have always avoided it and discouraged people from using it. I could be mistaken but that’s my current understanding.

DH: I would not recommend using oxidized form of vitamin C much in the same way with co-Q10, the new ubiquinol which is the reduced form appears to be more effective at the cellular than the oxidized form unless you’re a young person and have a really active ability to regenerate your antioxidants.

DM: Sometimes the devil is in the details there is no question.

DH: Yeah, no question.

DM: Are there any concerns with ages giving vitamin C? Would you give it to a newborn or an infant? Obviously, it would be an oral where it’s something they would chew or swallow or drink.

DH: Dr. Klenner who was a pioneer in vitamin C used to give his pregnant mothers 3 to 6 grams a day. My daughter who just had our first grandchild about 14 months ago, I think she took 4 or 5 grams a day and had a very easy delivery. She has continued to give her daughter at least 250 to 500 mg per day. I would strongly encourage it.

Most pediatricians accept the fact that babies will have 8 to 10 upper respiratory infections in the first year of life. That’s true if they are low in vitamin C. If you give them adequate vitamin C and vitamin D and a couple of these other nutrients, the kids just don’t get sick.

This has been true for our granddaughter. She’s been in a daycare setting. I think she’s had one upper respiratory infection in 14 months.

DM: I might add there is probably a powerful synergy which is the new craze vitamin which is vitamin D. Thankfully it has gotten more recognition. It truly is not a vitamin of course because vitamin is really reserved for the terms that we can only get from our diet.

We can clearly get vitamin D from exposing our skin to sunshine; the proper amount of sunshine. Vitamin D has many similar benefits. When you combine that with therapeutic levels of vitamin D and vitamin C, you really make it very difficult to get sick.

DH: I’ve had many patients in the last year that say they’ve been through the winter months without getting ill. Knock on wood, it’s been over two years since I’ve had a respiratory infection.

DM: It’s just an aside but I think an important comment -- you could address this too because you have a lot more experience in this which you’ve focused on cancer. It’s my personal belief that if you have a proper lifestyle, you avoid most of the toxins, you’re exercising properly, you have optimized vitamin D levels, optimized vitamin C levels, are
taking regular amounts of it, really pretty much eating a healthy diet and staying away from the bad stuff, processed foods and other components, it’s very unlikely you’re going to come down with cancer. You would essentially, by following this type of lifestyle, you immunize yourself against well over 90% maybe over 95% of potential malignancies.

DH: In the symposium that I just came from and the one we had two weeks ago, we talked a lot about cancer being the non-healing wound. This is a new concept in what cancer is. Most people think of cancer as something from the outside that is taking over the body and kind of the invasion of the body snatcher type thing. But in reality it appears that cancer is the maladaptive bonds to sustained injury.

If you take any area of the body and injure it with toxins, radiation, you name it, and the body attempts to heal that wound, but runs out of healing resources, then that wound will start to turn cancerous. The non-healing wound will start to turn cancerous and it turns out that cancer may itself be the healing process maladapting to a nutrient deficient situation.

DM: I love that perspective. What level of immunity do you think it would provide if you had an optimized lifestyle? How much do you think it would reduce your risk of it? I know it’s just a guess but your guess is better than mine because you see this all the time.

DH: Dr. Roger Williams, the great nutritionist researcher, basically said that the environment of the cell can always be improved which means that any of us, all of us could do a little bit better at any given time. But if you’re really working from an optimal state where you got all your nutrient levels optimized, you got your toxic levels reduced as much as possible, you’re getting exercise and sleep.

Just coming from Japan, there is a term that I learned called ‘ikigai.’ Ikigai means ‘your purpose for living.’ If you got a strong ikigai, I don’t think you’re going to be nearly as likely to get cancer as someone who is malnourished, leading an absurd existence, not getting enough sleep, exposing themselves to toxins. A lot of our toxins are self exposed toxins. I think those people are going to be at a much higher risk for cancer compared to someone who is taking good care of themselves.

DM: Number wise, do you think it might be as much a 90% reduction in the likelihood because it’s all a matter of (indiscernible 29:31)

DH: I would like to think so. My whole reason for being in this field is so I could learn how to take better care of myself and my family. I’m not planning on getting cancer. I do see patients who think they’re doing everything right and they still get cancer.

That’s why we do encourage nutrient testing and various ways to assess your state because you do need reality checks because sometimes they think their doing good but they’re not doing as good as great.
DM: Another common reality check that is really, there is virtually no way to know, you can’t perceive this is your vitamin D level.

DH: You can’t do blood levels on that absolutely.

DM: You just don’t know. Even though you think you’re taking, swallowing enough, even maybe 5000 units. There are people that I’ve seen, I’m sure you’ve seen too who need 20,000 - 30,000 units a day or two hours of exposure to sunshine or a combination of something.

So you got get out there. If you’re treating cancer, you probably want to get closer to 80 to 100 nanograms per ml to treat that effectively rather than the 50. It’s a very powerful thing. I would pledge (indiscernible 30:39) at that point.

DH: That’s where Dr. Riordan, my boss, who is started our clinic -- he basically said the big missing piece in nutritional medicine was the use of the lab to verify optimal levels. Not everyone is going have the resources to do that but if you can periodically get tested, that’s going to give you -- to me that’s probably one of your best way -- I look upon nutrient levels as kind of tumor markers. If you’ve got good nutrient -- if you’ve got a very good vitamin D level, that’s as good as having a low tumor marker.

DM: Let me just go off on another little tangent here because I had mentioned the vitamin D level but in doing my lectures there are a few other simple tests that can be done that is to check for iron or ferritin. Ideally it should be between 20 to 80. I’m sure you’ve seen and the experience what I have is many as 20% of the people out there have elevated iron levels which will increase your risk of cancer.

DH: That’s exactly right.

DM: You don’t need to take a supplement for it. All you need to do is donate your blood. It’s the most effective way, a therapeutic phlebotomy and you can radically reduce and eliminate that risk factor; so a ferritin level. Insulin level that tells you if your diet is appropriate. If you’re exercising and you’re eating the right amount of protein, carbs, and fats. And your insulin (indiscernible 32:02) is another huge risk. These are three simple tests --

DH: Actually, the people that go in and see their cardiologist and get lipid levels and blood sugar levels; the risk factors for heart disease are very similar to the risk factors for cancer. So if you’ve got an elevated glucose, elevated lipids, elevated CRP. We think the CRP is a pretty tumor marker. Those are things you need to work on and work on your level of inflammation.

There is really a nice new book out now called Anticancer by Dr. David Servan-Schreiber. He has a beautiful chapter on how what you eat modulates your level of inflammation. So just for people becoming aware of their CRP and learning how to eat
better and take better care of themselves in order to lower the CRP that can make a huge difference right there.

**DM:** In addition to cancer and heart disease, there are two other diseases that the same indicators will give you risk factors for which is diabetes; one in four people have it, and the upcoming epidemic which is losing your brain and your mind which is Alzheimer’s. The projections are one in three people will have that in the next few decades.

**DH:** All four of those major disease categories are related to excessive inflammation. I wrote a little book on inflammation which basically showed that the major factor that’s causing an excessive inflammation in modern times is the diet. The modern diet is 20 times more inflammatory than the hunter-gatherer type diet.

**DM:** That’s clearly a key indication. Another element that I think has not gotten a lot of press but I’m recently exploring and really haven’t talked about it too much on the site is something called earthing where you’re grounding yourself to the earth; ideally when you’re sleeping or certainly in your work environment. The Earth is able to pass these free electrons and get rid of that inflammation.

Dr. Stephen Sinatra is probably the leading natural cardiologist in the country who has done a lot of work in this area. He’s actually shown that massively improves platelet aggregation and limits the blood clotting or optimizes the blood clotting ability which is why most people have strokes and heart attacks is because they get a blood clot which is related to the inflammation. So a lot of basic things.

I don’t know what your experience is with earthing. Personally, I’ve been using it for awhile. I’ve known about it for about five or six years but I recently became convinced that it’s valid. My concerns about sort of using it as an antenna for gathering negative EMS were not valid. We’re going to be recommending it in the near future.

**DH:** Yeah, I think that’s a good idea. The other thing that’s come up in the whole I.V. vitamin C arena is that one of the causes for cancer is decreased oxygen utilization.

It’s interesting to me that a lot of the therapies that are used for cancer actually are using oxidants, intracellular oxidants because vitamin C at high doses, just creates more of the hydroxyl radical.

Dr. Frank Shallenberger is using ozone therapy as a treatment for cancer patients. He has developed a way of measuring ATP utilization. Every cancer patient he’s checked has very low ATP levels.

So when you use an oxidant, you improve your transformation of NADH or NAD. NAD is absolutely necessary at the cellular level in order to make ATP. If you have adequate amounts of ATP then your cells can generate the antioxidant enzymes that you need to control the excessive oxidation that sets up the inflammatory response and the whole cascade of events that lead towards cancer. Things like exercise with oxygen therapy,
anything that can improve your utilization of oxygen may be actually an anticancer approach.

DM: One of the other areas that people believe there may be an indication for and actually are using it and I’m wondering if you can comment on this is the use of oral vitamin C to chelate out heavy metals or for detoxifying. What is your experience with that?

DH: This is pretty well covered in Dr. Levy’s book *Curing the Incurable*. He covers about 10 different major toxins that vitamin C will help to neutralize. In my talk on the I.V. vitamin C protocol for cancer patients, remember that I mentioned that cancer is due to sustained injury. Well, you’ve got to move the cause if you hope to get over the cancer.

So very often, heavy metal toxicity is a major cause of cancer. It reduces ATP formation. It interferes with enzyme functioning within cells.

The other big thing we’re finding out is that heavy metals reduce your body’s ability to spontaneously generate adult stem cells. If you want to promote healing within the body, you have to do everything you can to detoxify. I.V. vitamin C is a mild chelator as well as it helps your detoxification systems in the body, restores glutathione functioning and things like that.

DM: I recently met a surgical oncologist who works out of Washington DC who is using infrared saunas in conjunction with interestingly a high dose of niacin to serve as lipolysis. Most of the toxins are stored in the fat about a hundred to one.

DH: I agree with that absolutely.

DM: He was doing pre-imposed fat biopsies to monitor the effect and he was seeing extraordinary results. He actually had an eight million dollar grant from the Department Defense to treat Gulf War veterans and 9/11 victims and would see really impressive results. I think that would be another point.

He used a high dose niacin up to 5 grams working up slowly with the sauna. Actually exercising before to stimulate the lymphatics and get it out. He would see pretty impressive results.

DH: If you’re going to treat cancer, you can’t rely upon one modality. Even though we do kind of focus on I.V. vitamin C at our clinic, we basically are measuring nutrient levels. We’re having people reexamine what they’re eating. We’re encouraging detoxification strategies, regular exercise, adequate sleep, improving interpersonal relationships, all of these can have a bearing on your outcome in cancer.

DM: I guess a real common one that traditionally of course people have used vitamin C is for the common cold. I’ve been promoting high dose vitamin D if you haven’t been using it before as one time dose but I just think a combination would be good.
What are your most effective strategies for incorporating vitamin C? From what you mentioned earlier, it sounds like in every hour, use of the vitamin C supplement would be useful if you can integrate that into your lifestyle but rather than taking one dose once a day or even twice a day, you’re going to get better results if you have a lower dose more frequently.

DH: Yeah, you’re going to get higher sustained blood levels. If you’re starting to come down with a cold, I would recommend anywhere from 1 to 4 grams every hour until you get loose stools. Very often you can head off a cold that way.

I also use 50,000 units of vitamin D3 once or twice a day for a couple of days if you want to try to stop a cold on its tracks.

DM: The early you start the better I’m sure. Do you find that those doses that it makes any difference if you were using a vitamin C with bioflavonoids or a powder that you would put in? If it’s a type of powder like sodium ascorbate versus some of the other mineral ascorbates make a difference?

DH: Dr. Gary Gordon has come up with what he calls a tightly balanced sodium ascorbate powder that incorporates some D-Ribose and MSM (Methylsulfonylmethane). I’ve been using a lot of that lately. I found that people can take a lot more of it than they can regular buffered C or ascorbic acid. But, you know, it’s more expensive.

I think ascorbic acid is fine if you have to put it in a little bit of water with a little bit of juice in it. That will cut the taste. As long as it doesn’t upset your stomach you can do a small amount frequently, you should be fine.

DM: With the juice like from a lemon or lime which you have much less fructose.

DH: That would be the best way to do it.

DM: Would that buffer it essentially?

DH: It will to a certain extent. Yeah, it will to a certain extent.

DM: I like lemons and limes. In fact, it’s sort of our trick for using vegetable juice which is another powerful intervention just juicing vegetables because we all need five, six, seven servings of vegetables a day. How many of us are doing that? If you integrate a vegetable juice into your program, you can do that. But the lime or a lemon makes a huge difference in making it palatable.

DH: Right, I think that’s a great idea. Dr. Abram Hoffer who is Dr. Riordan’s good friend actually did a thing with about up to a thousand patients. This was years ago where he had to go up to as high an amount of vitamin C as they could take -- niacin, B complex, selenium, vitamin E and vitamin D.
This oral program, he found, dramatically improves survivability in cancer patients. Some of these oral synergisms, like I call it redox synergy, if you use these things together you’re going to get a lot better effects than if you used just one thing alone.

**DM:** What I’ve noticed after three decades in health is that the more you know and really understand about the truth of this matter really it’s pretty simple. It’s back to the basics. It’s not rocket science. That’s very encouraging for those who are listening because it really empowers us understand that we can, as a consumer, as a patient who didn’t go to medical school really take control of our health.

Integrating this very simple and most of the time inexpensive and virtually in most cases without side effects, treatments. They can have radical improvements in your health that you don’t have to rely on these dangerous and inexpensive medications that can wipe you out prematurely.

**DH:** I’ve often told patients that your cells really don’t care what diagnosis the doctor is giving the problem. They only want to make sure they have their key nutrients that they need to run the metabolism that cells have and then they want to make sure that the toxins that interfere, the anti-nutrients that interfere with their functioning get those out. If you do those two things, you can achieve a very high level of health.

**DM:** I’m glad we’re in agreement with that because it seems to make a lot of sense. I guess we’re at the end of the interview. If you just want to make any closing comments and emphasize any key points and then we’ll additionally ask for a specific follow up information or contact information if someone wants to find what you’re doing and know about you.

**DH:** Just to let people know that intravenous vitamin C, in my mind, is the rediscovery of an innate healing ability that all organisms use when they’re stressed, sick, infected, or injured. I.V. vitamin C has been used in burn patients. It’s been used in chronic infection patients. It’s been used for depression. There is just so many things that respond well to intravenous vitamin C. this is for people that have a serious illness.

Now, if you’re well and you want to stay well, you don’t have to do I.V. vitamin C. Though I do have a friend of mine in Japan who every member, every sibling, I think he’s got like eight siblings and they all have cancer. He’s doing a 25 gram I.V. vitamin C every week to prevent the cancer that everyone else in his family seems to be getting.

You can use it preventively though I think a good lifestyle, good habits of health, good nutrition works just as well if you can stay well that way. But if you do get sick, it’s a very powerful tool that I think is underutilized by most doctors.

**DM:** Again if you can highlight the resources that people could obtain more information or learn about you and what you’re doing in your clinic.
DH: The Riordan Clinic has a very nice website; www.RiordanClinic.org. We’re a non-profit organization. If you click under Research, there are two pathways you can go down. One, it has all of our research articles that we’ve published, over a hundred different articles that we’ve published.

On the other side of it, it has the Riordan IVC Protocol and some basic information and videos about the RECNAC research project that was undertaken in the 90s that is very helpful to people.

Then the other resource is the www.HealthHunterOnline.org. When you click on Videos there is one called How Vitamin C Fights Cancer. That’s me talking about the mechanism of how it works.

The other is Dr. Glen Hyland - IVC, Chemotherapy, Radiation - Are they Compatible? Where he gives a very compelling lecture to a group of scientists about how not only are they compatible but they are synergistic and improve quality of life.

DM: I thank you for those resources. I thank you for your time today in helping us better understand this really powerful resource that we can easily incorporate into our lifestyle and use more aggressively if serious illness does develop to a very good benefit for anyone seeking to apply that.

So thank you again and best of luck with your work out there.

DH: Thank you Joe for all the work you do to get this message out.

[END]