Iron Disorders:
A Special Interview with Gerry Koenig
By Dr. Joseph Mercola

JM: Dr. Joseph Mercola

GK: Gerry Koenig

JM: One out of three of you watching this video have a serious overabundance of a mineral that may be more dangerous to your health than lack of vitamin D. Hi, this is Dr. Mercola, helping you take control of your health. Today, we are joined by Gerry Koenig, who is the past chairman of the Iron Disorders Institute and also Hemochromatosis [Foundation]. That mineral that I was referring to was iron. Virtually no physician fully appreciates the danger of excess iron, which we’re going to discuss today. Welcome and thank you for joining us today, Gerry.

GK: Thank you, Dr. Mercola. Good to be here.

JM: You have a very interesting story and a powerful illustration of what can happen to someone who’s exposed to too much iron. I think it’s going to be a really powerful anecdote for anyone watching this. Maybe you can give us a little history of what your experience was prior to your encounter with this excess iron and exactly how you evolved to develop a really significant understanding to this, especially [you’re] one of the leaders in this movement to help people understand the dangers of excess iron.

GK: My own situation started back in the ‘90s. Actually, I was in pretty good shape. As I approached my 50th birthday, I lost a lot of weight, worked out, and felt pretty healthy. I was able to – at age 55 – walk five miles in 55 minutes. Good shape, thin waistline, and all that. I had previously been pretty obese. I didn’t go to the doctors regularly. I felt good. But suddenly, several years later, we moved. I didn’t feel so well after a couple of years though I continued to workout. My bodyweight was low and all that. I went for a physical and found out that my liver enzymes were high. The doctor recommended I stop drinking. I stopped drinking. But before you know it, I got sick again. Several doctors over three years. I stopped drinking in 2003 entirely. It was not a problem. It turns out I have kind of what they called the hemolytic anemia, where my red blood cells were breaking down. Not being involved in the science all at that time, I didn’t know what that really meant nor apparently did my doctor so much. They never tested my iron. I would find out later that basically it wasn’t commonly being tested for after about 1997.

Then I got pretty very ill. I was going to hematologists to check out what this hemolytic anemia was all about. He never gave me iron either. I didn’t know anything about ferritin, serum iron, transferrin, iron-binding capacity – any of that. Finally, I had an episode where I went to the hospital. I had encephalopathy, a pretty serious condition. Again that was two years after I completely stopped drinking. Supposedly if you take the abuse away – and that was the purported abuse – you’d get better. Your liver would heal.
But that wasn’t the problem. Then I got sick again. I was watching everything. We’re not going to the hospital. They said I would need a new liver. I didn’t finally get an iron test until the eve of my liver transplant in 2005 when I went to the hospital that was going to treat me at Baylor, and they finally tested my iron levels. I didn’t even check what it was until much later. I didn’t know anything about tests at that time. Then in 2005, I did qualify for the transplant.

**JM:** Your liver damage was so severe at that point that you required a liver transplant.

**GK:** Right. It continued to get worse and nobody understood why that was the case. It was affecting me mentally, because of the encephalopathy. I got on the list and ultimately got a liver transplant in 2005. I was so curious as to why I would never – when I drank, I was not a super heavy drinker. I’m kind of mathematically oriented. I did some research. Apparently, only about 10 percent or nine percent of the people who drank more than my 10 drinks a day would develop cirrhosis, and not every one of those if they stopped the abuse would generally be OK.

Going through the numbers, I studied after a while. I didn’t know anything really what was going on until, I, by chance, ran across a Scientific American. It described something called hemochromatosis, which I didn’t know anything about again. I decided I would have the test. As it turns out, I have a single gene for one of the variants for hemochromatosis – c282y. Because of that, I decided to look into it more and started researching it, and I got rather… I’m doing a lot of research for it, and I’ve been doing it for the last 11 years now.

I found out that most people who do drink who get cirrhosis have an iron problem. They never really told me about that at the time. Looking back over my history, I used to get unusual infections – skin infections, things that just erupted – and I didn’t know there was something pretty much controlling that, and those were my iron levels. I found out the hard way.

As I get into the research, I found more and more out and started to work and get invited to serve on the board of Iron Disorders Institute and – because I really loved the science – started to work with several of their M.D.s, Ph.D.s., and noted researchers in the field of iron homeostasis, and started working, helping them on papers with some research, that type of thing. As it turns out, our organization is the largest in the world dealing with iron disorders. There’s not a lot of competition.

**JM:** Let’s not kind of summarize things a bit. You’re one of those individuals who have this genetic disease called hemochromatosis, which is a problem. But why don’t you tell us specifically what that genetic disease involves and what the incidence is in the population, because the large percentage of people watching this probably doesn’t have hemochromatosis.

But as I opened with and in my clinical experience, I suspect you’d confirm this, perhaps one in three people maybe even more, because we have a relatively older population, have excessive iron in their system, which is damaging and causing the dying prematurely from cancer, heart disease, and a variety of other disorders. That’s why you need to pay attention. This is not some rare disorder that Gerry came down with. It’s an unfortunate tragedy. He had liver transplant, but is still alive.

This is something that – I can guarantee you, without a single micro doubt in my mind – is affecting you or someone you know or love. No doubt in my mind. You’ve got to pay attention to this, because the devil’s in the details and your doctor doesn’t know this. Period. There’s a chance, but it’s a very small chance, probably less than one in 100 amount of chance.

**GK:** That’s correct. The reasons why they don’t know, which I’d say is really sad there. Terrible. Most of the people who get metabolic diseases – including heart disease, cardiomyopathy, non-alcoholic fatty liver disease (which is basically the same thing as alcoholic fatty liver disease).
JM: Just a different cause.

GK: Yeah, different cause. I don’t know why there was a difference in the name other than the fact that… Part of our research and some of the researchers and MDs that I’ve worked with… One did a large randomized controlled trial on the veterans with atherosclerosis. We finally got that trial approved. It turns out over 10 years, he phlebotomized him, which he drew blood from him to reduce the ferritin levels down to roughly to get down that low as 50 to 60.

JM: I’m sorry to interrupt you, but I just want to get down the basics, so people understand. First, let’s go to the hemochromatosis. How many people have it, this genetic disease? Then we’ll go into some of the lab tests that you can use to measure iron and explain why it’s such an issue, especially from a biochemical perspective, because it’s a really simple mechanism that I would say one to thousand, maybe one in ten thousand physicians is aware of, maybe less than that. It’s not well understood. Only biochemists really understand the mechanism in my experience.

[----- 10:00 -----]

GK: Right.

JM: The hemochromatosis, how common is it?

GK: Hemochromatosis. 100 million people in America, U.S. have this one gene for hemochromatosis. But not all of them gets sick with an iron overload disorder. [CROSSTALK]

JM: You have one gene for it. You’re the one in three people in the United States or little less than one in three (certainly more than one in four, somewhere one in 3.5) that has this disorder of this genetic aberration, this anomaly. Does that mean invariably you have increased iron or do you need the double gene to get that?

GK: The double gene is more common for the typical presentation of liver cirrhosis or cardiomyopathy and arthritis. That’s the standard textbook going back to the 1860 definition of hemochromatosis. With respect to the people with the genes, that’s a fairly rare disorder.

JM: What is that? One in 10,000, one in a 100,000?

GK: Every year, there’s roughly 36,000 liver deaths and about 6,000 transplants where the person survives. Most all of those to some extent are affected by iron. It might not be the sole reason but certainly a contributing factor in pretty much everything. Today the largest condition that’s causing liver transplantation and liver death is non-alcoholic fatty liver disease going to non-alcoholic steatohepatitis. I found out from my surgeons who worked with me 10 years ago, that that’s by far supplanting all of the means of liver deaths.

JM: Previously, we’ve done interviews on this before, specifically I’m thinking with Robert Lustig, who’s a pediatric endocrinologist from the University of California in San Francisco. He’s assertion or belief is that fructose is a major contributor to those. I suspect that that’s true. But I am quite confident that he’s slightly not looked at interaction and the influence of this excess iron. Yes, fructose is damaging. You shouldn’t have it in excess, especially refined fructose. But if you combine that with excess iron, you’re handing massive fuels to the fire. It’s a powerful, deadly, poisonous synergy that’s going to accelerate pathology.

GK: I’ve began to look at it like a three-legged stool. You need to have sturdy legs in three areas. One I only learned about fairly recently that basically once you keep an iron balance within normal ranges, you
should be tested to do that. Typically an iron panel is a fairly inexpensive test. Test your serum ferritin, which measures stored iron in the body.

**JM:** That’s the standard. We mentioned it here. That is the gold key. Most doctors don’t appreciate that. Virtually no one, no one is using it as a screening test. The normal levels ideally… Here’s the other key to this too that’s so profoundly important. Because as a physician when I graduated medical school in 1982, if you had your blood panel done and you did a cholesterol level, if it was under 300, say, it’s 298, the lab would say it’s normal. That was in 1982. Now they changed that in the late ‘80s. They changed the numbers. Of course, now it’s below 150 or even lower at some labs. But the point is it’s even worse for ferritin, because it’s the same damn numbers. If you have a ferritin of 295, you’re normal.

**GK:** Actually today in some labs, it’s 395, you’re normal.

**JM:** 395, it’s even worse than I said. It’s even worse.

**GK:** As opposed to cholesterol where the labs listen to the pharmaceutical companies; iron there’s no pharmaceutical company so to speak. Because serum ferritin has gone up over time in almost all populations, particularly ones on Western diets, anybody eating other than native food of their ancestors has a higher serum ferritin than their ancestors had 75 years ago. Roughly those numbers at a population basis have doubled.

**JM:** Let’s go over the numbers, too. In some labs, a number of 385, you are in serious, serious [INAUDIBLE]. You are guaranteed to have disease at those numbers. Ideally, it should be somewhere below 80 for sure and above 20. Somewhere in that range is a sweet spot. I like to say it’s pretty similar to vitamin D levels, because the actual use is similar. 40 to 60, maybe 60, a little bit higher. But 40 to 60, you’ve got enough iron, you don’t have an excess. Hardly anyone watching this has those numbers unless you’re a premenopausal woman or a child.

**GK:** That’s right. Even some populations in the U.S. now, the premenopausal women, if they’re not under control, their numbers would go up to 60 or 70, which is dangerous if they get pregnant. More of a chance of poor outcomes in the pregnancy. The U.S., we’re 35th in the world in infant survival or infant demise. It’s a terrible situation when you look at the numbers. Again, I’m kind of the numbers freak. There’s no reason for this. There’s no reason for us to have a population that’s so unhealthy given the access to medical care that we have.

**JM:** No question. Let’s say this again: unless you’re a pregnant, premenopausal woman if you’re bleeding with menstrual cycle every month, and it’s a significant flow, or a child, or you have a significant blood loss or if you have peptic ulcer or something that you’re losing blood or anemic from blood loss, most likely you don’t have iron excess; you may have iron deficiency and may actually benefit. But for almost everyone else, you need to have your blood ferritin checked and you need to shoot for those levels that we mentioned, somewhere from 60 to 80 nanograms per milliliter. If it’s higher, you have a problem.

To understand that your doctor is basically almost guaranteed to be clueless about this, he will not know, because it’s not taught conventionally, there’s no pharmaceutical push, there’s no drug therapy for this. There are some, but they don’t work well. Basically, the therapy is almost free. You just donate your blood. That’s it. A simple therapy of phlebotomy if you can. We’ll discuss these.

But it’s a simple thing. Why don’t you go over the other tests that physicians will use to screen for iron overload, which really don’t do well – basically, serum iron, the total iron-binding capacity, and transferrin saturation. Even hematologists will use it. I think a lot of hematologists don’t understand this disorder. You could probably speak about this far better than I could.
**GK:** As a matter of fact, because I had the anemia, hemolytic anemia before I got really sick, I had a hematologist who took a bunch of tests every month but never tested my iron levels.

**JM:** That’s just insane. That, to me, is gross medical negligence malpractice. It’s his subspecialty. I can understand if he’s a GP, even an internist. But if that’s your specialty how come you don’t know this? It’s just so outrageous.

**GK:** I understand. In 1997, I got sick well after that. But 1997, somebody influenced the people responsible for test reimbursement in the U.S. Basically you can’t do a screening and get reimbursed for an iron panel, which is a pretty simple test. I found out myself even when I was sick and wanted to have my measures taken (this was afterwards) if I didn’t get a prescription and that prescription wasn’t written correctly for this test, it would get bounced back by the insurance company and I’d have to pay out of pocket.

**JM:** What type of test is that? The iron panel?

**GK:** It’s an iron panel. It’s basically serum iron. You can order it usually. Basically iron panel – serum iron, iron-binding capacity, and ferritin.

**JM:** Is there ever a need to do the whole panel? Can’t you just order serum ferritin, which is pretty cheap and you can get it without a doctor’s prescription. I think Life Extension has it for 39 dollars. It’s not an expensive test.

**GK:** No. That’s correct. I have it online too. You can get it done pretty much anywhere.

**JM:** Good. That’s your website. What is the name of your website?

**GK:** It’s HealtheIron.com.

**JM:** You offer the test there too.

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**GK:** We use Quest Labs now.

**JM:** Quest Lab’s great. That’s where I get my labs done.

**GK:** We just added the new test, which is going to get to one of the other legs on the stool. That’s when I know that I didn’t listen to the [CROSSTALK].

**JM:** Gamma-glutamyl transpeptidase (GGTP), right? Is that it?

**GK:** No, GGT and omega-3 and -6.

**JM:** That’s good. Actually, I just got my results back last week. They also check for trans fat too, which is another useful index. [CROSSTALK] Let’s go back to the ferritin. Definitely the key message here, if I could plead with you, is to get your ferritin done. Unless you’re a premenopausal woman or a child, you need this done. I can almost guarantee you 100 percent that in the future, I don’t know when, five years, 10 years, 20, 30, 50 who knows? But at some point, the medical community’s going to wake up just like they woke up with vitamin D.

We know vitamin D is massively important. You are just irrational if you don’t understand and appreciate that and take measures to normalize and optimize your vitamin D levels. You were designed to have
healthy lives. But the problem is most of us have excess iron, partly because – and I want you to address this next, Gerry – we don’t excrete iron very well.

And understand the biology of this: nature could care less about our longevity. All that we are optimized for is to get to the age of reproduction and reproduce the species. Once you’re past the age of reproduction, nature doesn’t care about you too much. The higher iron levels when you’re older, they could care less. There’s no systems designed because there’s no driving force to pass to the gene pool, to optimize for this. It just isn’t. That’s just an artifact for the way we’ve come and grew up from our ancestors. If you understand that and you understand the biology of this.

Maybe now is a good time to answer what is the biology? I just want to discuss this for a moment. It’s really important. 90 percent of the fuel that we get is from burning oxygen and the fuel, which is either carbs or fat, in our mitochondria to produce ATP. You need oxygen to burn that, because it goes through the Krebs cycle. Oxygen normally, at least 95 percent of the time, typically gets converted to water. That’s what all electrons get glucose out, as water.

But anywhere from a half to five percent of the time, you’re going to develop what’s called a reactive oxygen species (ROS). The first one is superoxide dismutase (SOD). SOD actually transforms it to the next reactive oxygen species, which is hydrogen peroxide.

Here’s the key: there’s a reaction – in chemistry, it’s called Fenton’s reaction – where if you have excessive iron and that hydrogen peroxide is not going to water, it’s going to be catalyzed from hydroxyl free radical (which is the most potent, most destructive free radical known to man) and in literally nanoseconds will decimate mitochondrial DNA, mitochondrial proteins, and cellular membranes. It will accelerate every major disease that we know. That’s how it causes the pathologies, especially in the liver and the cardiovascular disease you mentioned. That’s what causes the damage.

You’ve got to keep that low. What makes it even worse is when you have a lot of carbohydrates as you primary fuel. Most people watching this are eating carbs as their primary fuel. You have 30 to 40 percent more reactive oxygen species on top of it. You’re closer to the five percent instead of the half percent. You have iron on top of that, you have a prescription for disaster. I forgot why we started with that, but I wanted to insert that. Actually make any corrections to what I stated, but that’s my understanding of the pathology.

**GK:** I think that’s correct. I think there’s no need on that to go further. But what people generally have when they eat better in terms of slowing those little fires down before they become a raging barn fire are antioxidants. Most important one is glutathione. If you don’t have good cellular health, including glutathione, those fires will just self-ignite and you’ll have a chain reaction of effects that go on until you’re really sick. That happened to me. I can feel it. I got a peripheral neuropathy. They try to say it’s a diabetic problem, and I never had diabetes.

Both of my legs simultaneously were on fire basically. The pain was unbelievable. You wind up going to a specialist for that, a neurologist. But when your membranes on your neurological system essentially flare up and melt, the pain is unbearable. That was just as I was getting sick. Nobody connected those to the iron. Nobody touched on the iron.

**JM:** That’s an important point. I’d like to highlight that, because about 30 years ago, the early ‘80s I think Denham Harman had this free radical theory of aging, which implied and suggested that a large dose of antioxidants would quench this production of free radicals. It was an interesting thought from the science that we knew. But that’s pretty much to the best of my knowledge, from studies I’ve reviewed been disproven. Yes, glutathione is important. You need it. But if you’re eating a healthy diet, unless you have some type of genetic anomaly, you’re going to make enough.
But the key here is two massive keys: you’ve got to lower the carbs that you’re eating and switch over to fat-burning modes, so that you can radically reduce those reactive oxygen species. Second but most importantly, the part that hardly anyone gets to understand, even the people who will understand fat-burning, they don’t know and understand and appreciate the importance of excess iron. Because if you have the iron and the carbs, that does it.

These reactive oxygen species are actually important signaling molecules too. They’re not necessarily bad. They’re just bad when they’re in excess. If you suppress them indiscriminately with antioxidants, you’ll run into problems. That’s why you want to lower the production rather than quelch them once they’ve been produced. Optimize it biologically rather than vitamins, supplement ways.

Even with supplements, Glutathione, you can supplement with it. There’s no question. But it typically has to be a phospholipid glutathione that’s absorbed sublingually because it – it’s a tripeptide I believe. It will breakdown into your gut; you want to absorb the whole.

**GK:** Even our basic diet, we’re low; the environment is low on sulfur. We have to add, farmers have to add sulfur to the crop to keep them from getting chlorotic when the leaves turn yellow. They’re not instructed to add any more than that. Because of the relatively clean air environment we have, the crops barely carry enough essential materials for us, in our bodies to make glutathione. That’s one of the reasons we’re low.

All indications that oxidative stress or poor levels of antioxidants, the natural vitamins, all the vitamins and glutathione are the lower than they were 34 years ago. Part of our compensation generally, we’ve gotten heavier. There’s not a great way to do it. You’re going to be sicker longer, and you might not drop from a heart attack, but it’s a poor compensating factor.

**JM:** When you are burning fat as your primary fuel, in my clinical experience, it’s virtually impossible to be overweight in the long run, because you are optimizing the vast majority of your metabolic processes, which includes primarily mitochondrial mitophagy or autophagy or mitochondrial biogenesis where you’re repairing, rejuvenating, and replacing the damaged mitochondria, which are ultimately one of the key indexes. We don’t really have a measurement for mitochondrial health and a good lab test. But really ultimately if we do… Would that index exist that will be your barometer of health. If you have a healthy mitochondria, you are in good shape.

**GK:** Right. Most people have leaky mitochondria because they haven’t been eating the right combinations of fats.

**JM:** Yes, absolutely.

**GK:** If you’re eating fats from a box – cookies and that type of thing – you’re not going to accumulate the omega-3s that you need to get in your body so you can be healthy not only outside the cell membranes, but the inside of the mitochondrial membrane, the outside of the mitochondrial membrane. If they’re leaking, it’s like a slow air leak in a car tire, leaking bad stuff out and part of that bad stuff is iron, which isn’t very big. Also the lysosome leakage happens.

That’s why people get in a situation that they’re inflamed all the time. The so-called autoimmune diseases also have this aspect of that as well. The molecule that I specialize in, gamma-glutamyl transferase, is an indication of that. Before they ever identified iron with autoimmune diseases, people were high in this one measurable component of the serum, gamma-glutamyl transferase.

They have a lot of literature on that going back to the ‘80s. People either forgot it or didn’t realize it was integral, because that’s the liver enzyme. Physicians try to tie that where you might have liver damage, or you have a liver problem if that’s high.
But that’s not necessarily the case. Essentially go through the list of autoimmune diseases and look up on PubMed GGT and put your disease and you see articles that runs high. You know you’ve got free iron leaking from cells in your body that’s causing this spike in GGT. This is fairly new. Not new science. It’s been kind of buried.

JM: It’s new to the clinical community and new as a result of your work and also another clinician or scientist that we’ve featured regularly on our site, which is Dr. Stephanie Seneff, who’s out at Massachusetts Institute of Technology (MIT). You’ve actually published papers with Dr. Seneff on this very issue GGT as a screening marker for excess iron.

GK: Yeah. That’s kind of new. I think it should have been known a long time. But just recently, a part of the studies that I’ll be adding to my website… There was a very interesting group of studies on the US Navy dolphins. Now, the dolphins had metabolic syndrome. Very, very high ferritin. Very, very high serum iron. They were unhealthy. Metabolic syndrome in any population is a sign of potential risk going from diabetes to heart disease.

They cured it by basically – these are captive dolphins – providing them good fish to have plenty of fats where they have been getting fish with poor fats. They brought in a specialist on that. It was a specialist on genetic disorder actually linked to ALD. If anybody remembers the film Lorenzo’s Oil, that’s where children have brain damage as a result of having this metabolism that doesn’t create a good mixture of fatty acids in the cell linings are damaged. The next step then is if the cell linings are damaged, the weak is damaged, particularly if it happens in the brain as most all neurodegenerative diseases are, including Alzheimer’s. If it happens in the brain, you’re going to get hurt. That’s just today’s problem.

In the last 10 years, a 52 percent increase in age-adjusted Alzheimer’s. This happens throughout the spectrum of life. It can be life-terminating at almost any point. If you have leakage of iron from subcells, lysosomes and red blood cells that’s normally called hemolysis, but it doesn’t have to be from the blood cells; it can be from all cells. It’ll shoot the ferritin level up high as an indication of risk. That’s when action should be taken. It’s hard to find specialists. We don’t have specialists. We need a couple of thousand general practitioners who know about this.

JM: Anyone watching this, please understand that even at this point of the interview, you probably know more, highly likely you know more about this problem than the potential of your physician. It doesn’t mean they’re bad guys. It just means they’re overwhelmed with other information. This is not being brought to their attention in the medical literature, their journals, or their conferences. There’s no reason why they should necessarily know unless they’re personally affected.

You’ve got to be careful when you go to the hospital. You have to know about the disease. You have to be your own doctor, and then ideally, with the information you have and if you have a good relationship with your physician (hopefully you do), you can encourage them to look on this to dig deep into this issue, because they are missing it.

Lots and many of their patients, at least a quarter, are seriously impaired with this, and they don’t know that. You can help directly your attending physician, because once they learn about it, then they can start screening for it, warn people, and go to the action, which is really simple. All you need to do is donate your blood. Get it out of your system. There are no drugs. There’s no supplement. It’s just remove the blood. An ideal point: if you’re an adult male, you want to donate your blood two to three times a year. That will virtually give you an immunity to excessive iron. Maybe you can comment on what I just said.

GK: I think it’s important to say too: we mentioned briefly the hemochromatosis genes not really relevant to this problem. This problem is universal. Over the last 30 to 40 years, we’ve had increased levels of
ferritin, approximately two-fold. When I look back at the population, ferritins from the ‘70s and various areas of the world, they are half of what they are now essentially.

**JM:** What are those numbers?

**GK:** For instance, the Eskimos or the Inuits down in 1970 topped out... There was a perfect almost straight line in men from childhood to adulthood. In their 70s, their ferritin approached 100. They ate. They ate huge amounts of sea mammals with huge amounts of iron far more than our beef has. Today they can become actually iron deficient if they go on a Western diet. They got adapted to it. I did a survey to a certain population I could find over 40 years. They are double now what they were back then. Standard.

When National Health and Nutrition Examination Survey 1976-1980 (NHANES I) was done in 1994, and NHANES II (1971-1974), they measured some ferritins. 1994 to 1996 I think it was. The male ferritin was under 100 in the U.S. Now the median is close to 200. In the minorities, it’s a lot higher.

My colleague, Leo Zacharski, published a paper this week showing why the African-Americans cannot hold the same amount of iron in their red cells as a genetic protection in Africa, but over here is a detriment. I think it’s the main contributor. If you look at the scales of premature death and infant mortality in African-Americans versus whites, that big difference can be accounted for by this one element, and an element it is. For instance, Hispanic-Americans live longer than white Americans. They handle the iron a little bit better.

**JM:** Speaking of that, it was sort of an obvious illustration of this danger of excess iron. Why don’t you discuss some of the statistics of those – and this has been done. The epidemiology of those who are actually donating their blood two or three times a year, as I suggested, is a helpful strategy to improve your lifespan to the life expectancy of those individuals compared to those who aren’t donating.

**GK:** It’s substantially longer in terms of an average. But more importantly, if you are donating, you’re likely not going to have a heart attack in the next couple of years. The free iron in the body measured by GGT happens to be a great indicator of sudden cardiac death, where you go to the hospital, you have a heart attack. You go to the hospital and you don’t come out.

One marker: that is iron, because it measures two things: one being a surrogate marker of free serum iron, not surrounded by a protective ferritin or transferrin.

**JM:** Do you think this is a more sensitive marker and indicator for damaged iron, the GGT?

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**GK:** I’ve been working on this since 2008, and I went with my data and met with the largest testing company. They had been taking it, because it was standardly a marker for alcohol. There are hundreds of papers on GGT and epidemiology. It’s always now – and has been through 20 years, 15 years – the best indicator of poor survival, whether it’s cancer, vascular diseases, cerebral and systemic diabetes, liver diseases certainly – the whole gamut. That’s the one marker.

If you only took that marker, you have an indication of iron that’s not well bound. When you have iron in the serum, it’s generally bound by transferrin, which carries two iron atoms through the serum. Ferritin can hold up to 4,000 to 4,500 iron molecules and put those inside the cells. If those measures are high, they’re risky, because you don’t know how well your body is going to hold on to that iron when the cells fall apart over time hemolysis or catabolism.
Our diet is the biggest factor today that’s really causing this problem. It’s not so much we’re eating too much iron; it’s that the iron we have in our body effectively can harm us. That’s where the GGT comes in. It’s a surrogate measure of free iron.

**JM:** Let’s talk about this. You believe it’s a more sensitive marker than ferritin.

**GK:** Yes, it’s more sensitive.

**JM:** This is a test that you’d have to have done by your doctor, because it’s not part of the normal liver panel, metabolic profiling.

**GK:** No as a matter of fact. Again, it’s another test like ferritin that’s not regularly done, but you can get it done. That’s a very cheap test. It’s a standalone test.

**JM:** I’m assuming you have that test available on your website.

**GK:** Yeah. I have a panel, including that and other things. I’m just adding a new one. It’s a test for the phospholipids.

**JM:** Phospholipids, I meant to comment on that when we were talking about fats. That’s another massively important thing to understand. They’re a dietary component that virtually no one appreciates. Phospholipids are not easy to come by. They’re there in egg yolks – ideally healthy eggs – fish eggs. They have it even at a higher concentration. But they’re really hard to get. Primarily phosphatidylcholine, but there’s also phosphatidylethanolamine. They are really important constituents of mitochondrial cell membranes. Specifically cardiolipin I think is also really important for that.

**GK:** I found that out the hard way. I only had this test done about a month ago. Like the rest of the US population, they say only 20 percent of the American population is in like a green area when it comes to omega-6: omega-3 balance. Mine was off the charts in a poor direction. Now I understood why my... I had a donated a lot of blood. I got my ferritin down to 35 to 40, but my GGT was still high. I didn’t understand that. I’ve been eating fairly well.

**JM:** Interesting. What are the GGT normals when people screen for? What are the optimums? Let’s say, the ferritin should be 40 to 60. What should the GGT be?

**GK:** GGT optimum. I’m going to go back to the 1970s marker, because what was optimum then... Framingham Heart Study in 1978 to 1982. That study done in Framingham. For female, the median age was 44 and 44 male. Their median was nine. The men, the median back then was 16. Above the medians, people got sick and died. Mortality the whole nine yards. It’s scaled. One thing that you know it’s core to the problem of health if a measurement is graded. If you have a little higher measure, your risk will be a little greater.

Now the lab that I had for a 45-year-old male, the lab range of GGT at Quest Lab is 95. It’s ridiculous because typically... Going back to women, women with GGT above 30 have higher risk of cancers – breast cancer, all kinds of cancers – and they will have high risk of autoimmune disease. Pick any of them. They all will carry a higher GGT. Doctors don’t like it, because they don’t have a specific drug they can give you.

**JM:** But there’s an intervention that hardly costs anything.

**GK:** Nothing. Right.

**JM:** It’s free.
GK: That’s why you have to really look towards one’s diet. I was caught out in the blue. I just read these articles, published this paper, inclusive of the US Navy dolphins and realized, “I wonder, that’s got to be my problem.” I had the test done. Unfortunately, that’s an expensive test. We have it at Quest.

JM: We work with William Harris, who does a fatty acid test. I forgot where he’s at. I just had it done from this company. I don’t think it’s that expensive. It’s a simple blood spot.

GK: Now, this is a test in the whole blood. Some of our other tests are blood. You have this done with it. It is expensive. Hopefully it will come down. I’d like to see a lot. I was shocked. I was in decent health recently, but my numbers were in the lowest quartile, which is not good.

JM: I actually had my test done like a month or two, but I just got my results back last week, because there was some mixed up. When I found them, I could be up like the five percent of the population for healthy fats.

GK: That’s good.

JM: Everything was good. I would tell you, it’s not like I’m a superstar or something. The issue is really, really simple. I eat low on the food chain and I eat healthy fats. The lowest animal fat you can have is sardines and anchovies. Unbelievable. They have one of the highest-quality omega fats you can get, along with fish oil. I have salmon fish oil. All three of those I’m having. Nearly every day I’m having them. It’s more than enough to saturate my cell membranes with healthy fats, really minimize the trans fats, and get the healthy omega-3 to -6 ratios. That’s a key thing that any one of you can do.

Now, how are you going to eat sardines or anchovies? You put them in your salad. You don’t eat them out of the can. Certainly don’t put them on a sandwich. The last thing you want to do is eating bread. Put them on your salad. That’ll help. It’s just simple steps. The longer I practice medicine, the more I understand how simple getting healthy really is and staying away from disease really is. It just goes back to the basics.

GK: Some people call it just an oil change. You want to change the oils on your cells. It’s very important.

JM: You can do it. Every one of us can do it.

GK: In the cells how it should be. You always want them to act like real cells used to. Our ancestral populations’ ratio of omega-6 to -3 apparently was 1:1. The Eskimos’ was even more than that. Their problem is they had a little bit too much. They had bloody noses pretty frequently. But the cells were doing very well.

JM: There’s a tendency to get confused on this. It’s not just 6:3, it’s the quality of those that’s absolutely essential. If you’re eating a processed vegetable oil, it’s not going to do it. You do not want refined oil in your body. Maybe you can get away with olive oil, but that’s maybe the only one I can think of. Most of the other oils, if you have them in your house, throw them away. Odds are they’re oxidized.

You want them fresh from the seeds. Flaxseeds. You can grind them. I used to grind them, but now I just soak them and put them in a smoothie. Or black sesame, black cumin seeds, pumpkin seeds, chia. Nuts like macadamia, pecans. These are all sources of unoxidized omega-6 in the right concentrations you need that will give you the balance that will not only move you towards health but will actually repair and regenerate and will give you the oil changes you referred to earlier.

GK: All good advice.
JM: It’s just so simple once you understand the basics. This is such a massively important topic. I was one of the journalists who catalyzed the wide adoption that we now have of the appreciation of vitamin D. I did that about 15 years ago. But I’m on a crusade now. I really am.

[----- 50:00 -----]

In my mind – I could be wrong – I really do believe it’s just as important as vitamin D. If you have high iron, which almost every one watching this does (unless you’re a woman or a child), you are stepping on the gas pedal of disease and aging. It will rapidly age you prematurely. No question. And you, you are a walking story for this whole thing. You had to get a liver transplant as a result of this. Admittedly, there was a genetic component to this, but still what you have is an accelerated version of what the vast majority of people watching this have today.

GK: Yes. If your doctor tells you that you have fatty liver disease, you probably have high iron, high ferritin. He probably will not test you for that. Get the test. You can see some benefit by some blood – or changing the diet. On my website, I have about 700 publications. If you want to dig into it, it’s a section. Find out how to reduce this by diet alone. It’s been done and done successfully.

JM: There are two key tips for diet that I’ve learned: one is vitamin C. It’s a great antioxidant. It is. But the last thing you want to do is eat vitamin C with a meal that has iron, because it keeps the absorption.

GK: Correct.

JM: Don’t do that. The other is calcium. I take calcium every day. My favorite form is crushing egg shells. I have a teaspoon of those crushed egg shells a day. I put them in any meal that has significant iron, because the calcium binds to the iron and limits the absorption. It impairs iron so to speak. It’s all about minimizing your absorption of iron.

GK: For most people that works well. The body is designed to not over-absorb non-heme iron, which is elemental iron. It’s the iron inside vegetables and fruits. If you do something to enhance that absorption, the body will take it in. The iron from meats basically, you can’t control that very well. We’re the only country in the world, together with Canada, to put in our grains and flours 44 parts per million of elemental iron. The other one is the UK. They put 16.5 parts per million. That’s a lot of iron and we don’t need it.

JM: Some people may. We’re not saying it universally.

GK: Some people may.

JM: There are people who have iron deficiency anemia. My sister happens to be one of them. She has a very heavy period and still does I believe. She may need an iron supplement and actually I think is on an iron supplement. But that’s the exception. Most people don’t need it. It’s such just an important message. You can literally, you can absolutely extend 10, 20, 30, 40 years of someone’s lifespan by telling them about this and getting it corrected. We’re not trying to sell you anything, except maybe get the test on Gerry’s site, which is HealtheIron?

GK: One word HealtheIron.com.

JM: It’s a simple thing. He’s got all the panels available. It’s all you need to do. You don’t need a doctor to order for you. Just order right on the site. It’s GGT, which I wasn’t aware of until Gerry brought it to my attention is more sensitive to ferritin. I actually have not done it myself, but I will. I’m pretty sure it’s… Finally, I’ve just gotten my recent ferritin level, 60. It’s never been that low. That’s where it needs to be.
Now, let’s talk about the recommendations, because not everyone – I think it’s probably less than half of the population – will be able to donate their blood. That leads to [INAUDIBLE]. But the rest of us, which is maybe the majority, you need to have therapeutic phlebotomy. Can you discuss that option?

In my case, I do it. If you know how to draw blood, I got capillary tubes and some 60cc syringe. I just suck out my blood myself. Every month, I take out 40cc a month. I’m sorry, four ounces a month. That would be 120cc. Not everyone’s going to be able to do that, but that’s the most convenient. Rather than to go somewhere just do it in my home. What are the options for someone who can’t donate blood and has high iron, which is a lot of people?

**GK:** The FDA just made some positive changes. We worked on that with one of our directors specializing in the blood area. The good news is all blood banks now can take your blood for hemochromatosis or iron overload.

**JM:** They can? I did not realize this.

**GK:** That’s a positive change in the FDA regulations. Long time coming. We were working on it for years. Now, that doesn’t mean your local blood bank is aware of it. They might not have a…

**JM:** How does the average person get that administrative personnel in the blood bank to understand that they can get it done. What do they need? Just the doctor’s order?

**GK:** A doctor’s order. Normally, the doctor has to tell the blood bank to use hematocrit, the hematocrit of whatever the number is the doctor’s comfortable with. It could be 40 or some number like that. The periodicity could be once a month until… The blood bank won’t test ferritin. That’s going to be outside of that. But they’ll test the hemoglobin. That’s not necessarily a good sign of anything.

**JM:** It’s a good barometer to know that you shouldn’t be donating more.

**GK:** Right. If you’re anemic.

**JM:** If you’re below a certain level, they’ll tell you to hold on, wait a few more weeks until your body’s able to build up. [CROSSTALK]

**GK:** If it turns out that you’re odd, like I was, and you had anemia and iron overload, which is not quite common, then you have to focus on other ways. There are other ways, either through diet or you might be able to get a doctor that can get you a trial or a prescription for chelation. The other thing is there are natural foods that act as really good chelators. One is curcumin.

**JM:** Curcumin?

**GK:** Yeah, it’s an excellent chelator.

**JM:** I didn’t realize that. That’s a derivative of …

**GK:** Turmeric.

**JM:** Turmeric.

**GK:** That’s why it’s such a powerful polyphenol. It does two things: it supplies good things to the body and it takes the iron out. The molecules themselves are perfect for that. One trial, I think I have it on my website, on the prevention of diabetes that was done in Thailand, which has a diabetes problem. That worked really, really well. As a matter of fact, at the end of the trial, none of the subjects were
randomized to the treatment, which is curcumin, got diabetes. Whereas the other part of the trial, many of them did. It was a double-blind designed trial.

**JM:** I did not realize that it has an iron-chelating benefit.

**GK:** That’s probably the strongest benefit of curcumin.

**JM:** It’s really useful. It’s interesting because I believe high iron is a significant variable in almost all cancers.

**GK:** Definitely.

**JM:** Interestingly, curcumin seems to be the only herb that I’m aware of personally that seems to be universally effective in most cancers. This may be the mechanism. Obviously, it has a very powerful polyphenolic hormetic antioxidant benefit and some other benefits, but I didn’t recognize that it’s a potent iron-chelating benefit.

**GK:** Our cancer specialist and friend of our scientist cancer specialist write that up very much. If you’re looking for that in respect to cancer, I have a number of articles on my site. I have a cancer page and several pages with articles. There’ll be some articles on foods that will help reduce that. The only way to reduce cancer risk is really get that free iron out of the system.

**JM:** That’s not the only way.

**GK:** I’m sure there are other ways.

**JM:** Really that’s one important way. The other one is to optimize your fuel burning so that you’re burning fat which is going to generate about 30 to 40 percent less free radicals, reactive oxygen. That’s the whole key. The whole key is limiting this to the lowest amount biologically possible that’s still healthy. Just like iron. You don’t want to eliminate iron. You want to have some, but you want to have it but at a healthy level, not the abnormal.

**GK:** I was thinking in terms of liver cancer, hepatocellular cancer, that’s a load of iron. Drugs will do nothing when you’ve accumulated that much iron in your liver.

**JM:** You’ve got to get to the cause. For most cancers, you’re not burning fat as a fuel, you have too much iron, and your vitamin D levels is too low. You those three things which are very, very, very simple. Your body is going to self-regulate and you’re going to be healthy. We’re kind of running out of time. I really could talk to you for hours. You’re just a wealth of information and really a useful component. Let me just emphasize again your website: HealtheIron.com. There’s hundreds of papers that you’re writing. You send me papers every week. I’ve read the papers you sent me. You really exhaustively review this topic and it’s a great resource for anyone needing more information.

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There’s also another good book called *Dumping Iron: How to Ditch This Secret Killer and Reclaim Your Health*, which I recently read. I think it was published in March of this year by a journalist. That really brings to light a lot of these simple layman’s terms that can give you a good understanding of it.

We didn’t have the time to go through the differentiation and confusion about a lot of the iron tests. Maybe we will on a future broadcast. Is there anything you’d like to emphasize before we close?
**GK:** No. I think we've covered it pretty much. It’s just be comfortable in what you read if it’s on my site or journal. I won’t always say that but… It’s important to study this. Unfortunately the doctors aren’t doing it. They just don’t understand it. What Dr. Mercola said is absolutely correct. They don’t know that.

**JM:** It’s sad. But literally, remember folks you have the potential, the power. You have the power to take control of your health, and you’ve done it. You’ve made these changes. With the information we provided, you’ve been motivated. You made changes in your purchasing power which has caused industry change. You can make the same change here. This is a critical crucial element of health that is going to affect each and every one of you. Learn more about it. Be an advocate. Encourage your physicians to wake up, get on board, recognize and treat this.

The treatment couldn’t be more simple. As Gerry just mentioned, we need to donate two to three times a year (unless you’re a menstruating woman). If you can’t donate because of whatever the restrictions are, get your doctor to write you a prescription for a therapeutic phlebotomy. The FDA, thanks to Gerry and his crew, has recently changed the rules. Every blood bank now can do that for you. They won’t charge you. This is a free service. You’re not paying for this. We’re not trying to sell you anything here, other than to sell you the idea that you need to understand and implement this information, because it literally is life or death for so many people watching this.

**GK:** I have to add one thing. Not every blood bank will know that they can do it. Some want to charge. They weren’t able to charge before. Now, they may be. I don’t know what the law is on that. Generally, it’s a fairly nominal charge for getting something in terms of a big health value. If you don’t have hemochromatosis, you’re going to be giving blood, downloading blood, maybe twice a year, three times a year. Typically the charges range from 30 dollars to 80 to 90 dollars. That’s not so bad for your health.

**JM:** Considering what you’re getting. Just shop around, especially in the large big urban areas. It’s more than likely you’ll find a place that will do it for free for you. Just please, please, I’m pleading with you, understand that this is a really crucial and important topic for you to consider for you and your family and those that you love. It really is.

Want more of this? Go to Gerry’s site, HealtheIron.com. Get tested. The serum ferritin and GGT are the only tests you need. Don’t get confused. You don’t need to get the other ones. If those are elevated you’ve got to take action. And there’s virtually no damage or danger by donating your blood. Not only are you benefitting yourself but the community. It’s a win-win-win for everyone. Let’s do it.

[END]