



Dr. Frank Shallenberger's **SECOND OPINION**

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HEALTH NOTES

Why the Disease (Zika) Isn't as Scary as the Treatment

Now that colder temperatures are here, we're not hearing as much about the Zika virus. But it's still around, particularly in warmer tropical areas like Texas, Florida, and Brazil. But is the Zika virus really causing the epidemic of microcephaly or is it something else? Did you know that there's absolutely no scientific proof that Zika has anything to do with the epidemic?

Despite what you hear on the news, the theory is simply based on observation and statistics. So it may not be the Zika virus that's causing the problem. Could it be a chemical? The answer might surprise you. But first, here's the problem with the Zika theory.

If the Zika virus is causing the microcephaly in Brazil, why is it that in other countries also hit hard with the virus there are no epidemics of microcephaly? Normally, there are about two babies born with microcephaly in every 10,000 births. But in Brazil the microcephaly rate has soared with more than 1,500 confirmed cases. And while it's true that many of those cases were also associated with a Zika infection, the same is not true in other countries.

Recently the *New England Journal of Medicine* reported that in neighboring Colombia, a study of nearly 12,000 pregnant women infected with Zika found zero microcephaly cases. Yes, I said zero! That's lower than the rate of microcephaly even in cases where the Zika virus is absent. In fact, there were a total of 50

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Brain Cancer Patient Beats the Odds With a Therapy I Thought Was a Hoax

If you live long enough, you just might start to become more than a little cynical about this world. I've been working in medicine for over 40 years now and the experience has made me more than just cynical. It's made me a hearty believer in something called Sturgeon's Law.

Theodore Sturgeon is a world famous science fiction author. In his later years, Sturgeon developed Sturgeon's Law. It's really quite simple. It goes like this: "90% of everything is crap." And in my time in medicine, I can tell you that Sturgeon's Law is pretty accurate. But notice that Sturgeon didn't say 100%.

There are a lot of things out there that at first glance appear to be in the 90% category, but then turn out to be the real thing. Something happened to me about three years ago that has led me to a place I would never have guessed I would go. And what I've learned since then just might be the most important message I send out all year (and it's only January). That's why I'm kicking off the New Year with this – and dedicating almost the entire issue of this month's Second Opinion to one topic. And all of this started with Barry.

I've known Barry for years. His son grew up with my son. But since the kids grew up, I hadn't seen him for a long time. Then one day about three years ago, Barry called me up and told me he was in trouble. Barry had started to have headaches and was losing his balance. A few scans later, he found out he had brain cancer. It was a solitary tumor, so the first thing his doctors did was to take it out surgically. He was immediately better, but you can guess what happened six months

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cases of microcephaly in Columbia during that time. And of the 50, only four of the women had a Zika infection. And, as the authors of the *New England Journal of Medicine* study point out, the association between these four cases and the Zika virus is most likely coincidental. This information strongly points to another reason for the epidemic in Brazil that has nothing to do with the Zika virus. So if it's not the Zika virus causing the epidemic, what is the cause?

According to the *New England Complex Systems Institute* (NECSI), one possibility is the pesticide pyriproxyfen. For the past few years, the Brazilian government has been applying pyriproxyfen to the water supplies in Brazil to kill the larvae of the mosquitoes that transmit Zika. Pyriproxyfen is an analogue for insect juvenile hormone. And here's the problem. Pyriproxyfen is cross reactive with retinoic acid, and retinoic acid is known to cause microcephaly. But be careful. Because you don't have to drink the water in Brazil to be exposed to pyriproxyfen.

Pyriproxyfen was first introduced in the U.S. in 1996 to protect crops against whitefly. It's also used as a prevention for flea control on household pets, and in products used to kill ants and roaches.

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later. The symptoms returned and the scans showed that the cancer was back. At this point, his doctors told him that the next step was radiation. So that's what he did.

The radiation knocked the tumor back a few notches and his symptoms disappeared again. But he was having such a hard time with the side effects of the radiation that he called me to see if there was something I could do. Now here's the thing. I wish he would have called me right away when he first had the diagnosis. I would have treated him with ozone therapy before and after the surgery and the radiation therapy. His odds for a cure would have been much better. And the side effects from both treatments would have been minimal. In my world, there's no way that a patient should have surgery or radiation therapy without a course of ozone therapy before and after. But that bridge was already crossed and so we had to deal with what was at hand. Barry still had brain cancer and he was now sick from radiation damage.

He immediately started a course of ozone therapy combined with intravenous vitamin C therapy. Within a few days he was already feeling better. Ozone treatment is the only treatment I have ever found that can turn radiation damage around. We continued the treatments along with some immune-stimulating supplements and a special diet. Barry was looking good a month later. And that's when we had the talk. I told him that although this plan was a good one, there was no way that it would be able to stop the cancer. He needed something else. That's when I lost track of him. He told me he was going to do some investigating. I figured that would likely be the last time I saw him this side of heaven. But I was wrong.

Barry's doctors had given him about six months to live. So imagine my surprise when I was driving to work one morning about a year later and the cell phone rang and it was Barry's number. My first thought was that he had died and one of his sons was using his phone to call me up to let me know. But it was Barry's voice. And he sounded great, like the same old Barry I had known for years. He told me that he started taking a special oil and had really tightened up on his diet. The result? He was feeling great. And unbelievably enough, his scans not only showed that his cancer had completely stopped growing, but they also showed that the cancer had actually shrunk! Of course, the first thing out of my mouth was, "What in the world have you been doing?"

"I started taking hemp oil," was the answer. Now I thought that hemp was just another word for the same remedy that Mick Jagger and hippies all over the world

have in their medicine cabinets — marijuana. But don't break out your old Jimi Hendrix records yet. Although hemp oil is very similar to marijuana, it's significantly different. Hemp and marijuana are versions or strains of the same plant — cannabis. The difference has to do with special substances in both hemp and marijuana called cannabinoids.

Cannabis has more than 100 different cannabinoids. But two of them stand out. One of them is THC (tetrahydrocannabinol). Marijuana has the distinction of having a very high content of THC. THC is the only cannabinol that gets you high. Too much THC and you can't think straight and become disoriented. But there's another cannabinol that's also found in high amounts. It's called CBD (cannabidiol). CBD does not produce a high. But as you will soon see, the effects of CBD on the human body are nothing short of amazing.

Besides THC and CBD, there also are a host of other cannabinoids in much smaller amounts in cannabis. But almost all the research on cannabis has looked at the effects of THC and CBD. The difference between hemp and marijuana has to do with THC. Hemp contains very little THC – less than 0.3%. Marijuana can contain anywhere from 5-30%. And there's another big difference. Hemp and hemp extracts, unlike marijuana, are legal in all 50 states. Other than the fact that hemp has almost no THC, the two plants are the same. All of the other cannabinoids are present in both plants. So what is the effect of CBD, and why did it work so well in Barry's case?

Here's a remarkable fact that I would never have guessed. Research has shown that our bodies actually make their own cannabinoids. The cannabinoids that we make are called endocannabinols. And in order for the body to use the endocannabinols it makes, it has its own cannabinol receptors. These receptors are special molecules that occur on the surface of cells that allow the endocannabinols to work. One absolutely amazing fact is that there are more cannabinol receptors in the human body than any other receptor system. That shows you just how important these molecules are for our health.

Multiple sclerosis and spinal cord injury, neuropathic pain, cancer, atherosclerosis, stroke, diabetes, myocardial infarction, hypertension, glaucoma, obesity, metabolic syndrome, and osteoporosis are just some of the diseases in which alterations in the endocannabinol system play a role. And that's where the magic of CBD works. CBD (and also THC) interacts with our cannabinol receptors.

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Methods of application include aerosols, bait, carpet powders, foggers, shampoos, and pet collars. In the U.S., it's marketed as Nylar, an anti-flea product often used by pet owners. It's classified as a Group E carcinogen, which means that while it's not associated with causing cancer, it's in the category of substances that can cause birth defects. And that's not all.

While actual human toxicity data on pyriproxyfen is very scarce, there's one report of a possible toxic effect of pyriproxyfen. That one report was on a rare birth defect called bladder exstrophy. So there's evidence for a pyriproxyfen congenital birth defect connection. And because of that and the new statistical data a physicians group in Brazil and Argentina, the Swedish Toxicology Sciences Research Center and NECSI have all called for further studies of the potential link between pyriproxyfen and microcephaly.

So, if you're pregnant and live in a mosquito prone area please avoid using chemical mosquito repellants in general. Pyriproxyfen might only be the tip of the iceberg. And definitely avoid using anything that contains pyriproxyfen. It only makes sense to be safe.

REFS:

Bar-Yam, Y., D. Evans, et al. "Is Zika the Cause of Microcephaly?" Status Report. *New England Complex Systems Institute*, June 22, 2016

<https://www.sciencedaily.com/releases/2016/06/160624150813.htm>

Rasmussen, S.A., D.J. Jamieson, et al. "Zika Virus and Birth Defects – Reviewing the Evidence for Causality." *New England Journal of Medicine*, 2016; 374 (20): 1981.

An Easy Way to Prevent Egg and Peanut Allergies

According to a recent study published in the *Journal of the American Medical Association*, there's a 5.4% chance that a child will develop an allergy to eggs. And there's a 2.5% chance of a peanut allergy. So perhaps to avoid the possibility of developing an allergy to these foods, it

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would be a good idea to delay feeding the foods to babies in their first year of life? Maybe that would decrease the chance that they will become allergic? Maybe it will also decrease their chance of getting an autoimmune disease? It makes sense. But, surprisingly, that's not what researchers recently discovered.

The authors of the study were looking to see if the timing of when certain typically allergenic foods such as eggs, peanuts, gluten, and fish were put in an infant's diet would influence the risk of subsequent allergies or autoimmune diseases. So, here's what they did. They searched the published literature for any trials that examined this question that were published in the last 70 years. They were looking specifically for studies that evaluated wheezing, eczema, allergies, hay fever, food allergy, type-1 diabetes, celiac disease, inflammatory bowel disease, autoimmune thyroid disease, and juvenile rheumatoid arthritis. Here's what they found out.

First of all, there was no connection in any of the studies that feeding babies various foods will somehow place them at risk for any autoimmune disease. That doesn't happen. But the interesting thing was that the age that an infant is when you start adding eggs and peanuts to his diet can determine whether he becomes allergic to these foods. The researchers found "moderate-certainty evidence from 5 trials (1,915 children) that early egg introduction at four to six months was associated with reduced egg allergy."

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For a complete listing of Dr. Shallenberger's recommended dietary supplements and nutraceuticals, please go to:

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In that sense, CBD works much more like a nutrient than a drug. And what it does when it interacts with the cannabinol receptors is nothing short of wonderful!

The receptors that CBD interacts with are found in large amounts in the peripheral nervous system, the internal organs, the skin, the muscles, the ligaments, and in the immune system. And when CBD acts on these cells, it decreases inflammation, decreases pain, decreases tension and anxiety, increases energy levels, and stimulates the immune system. So how did that help Barry? First of all it made him feel better, more relaxed, less pain, and more energy. But it also had a very obvious direct anti-cancer effect. How did it do that? In three ways.

First, almost all cancers require inflammation in order to survive. In fact, inflammation is so important to cancer that cancer cells activate a special pathway called the NF-kB (NF-kappa Beta) pathway that causes inflammation. CBD decreases inflammation by deactivating the NF-kB pathway. And in this way, it decreases the ability for cancer cells to grow and spread.

Secondly, CBD stimulates the immune system. When patients get cancer, their immune systems are often in need of help. And when they have surgery, radiation, and chemo, they need even more help. CBD can have a profoundly positive effect on the immune response. But that's not all. Like certain chemotherapy drugs, CBD is an angiogenesis inhibitor.

Angiogenesis is the process that cells use to form new blood vessels and improve blood flow. Since cancer cells don't die and are constantly growing, they have an ever-increasing need for more blood. So to provide the extra blood flow, cancer cells produce pro-angiogenic factors that act to promote angiogenesis. This allows them to grow and spread without restraint. Scientists have discovered that CBD acts as an angiogenesis inhibitor by preventing cancer cells from producing these pro-angiogenic factors and also by directly affecting blood-vessel growth.

And if that's not enough, CBD has a direct anti-cancer effect on tumors. By interacting with the cannabinol receptors on tumor cells, it inhibits tumor growth and leads to apoptosis. As most of my readers know by now, the reason that cancers are so problematic is that they refuse to die. Normal cells go through a process called apoptosis in which they eventually die. But cancer cells have found a way to avoid apoptosis. So they don't die! This leads to uncontrolled growth and all

of the problems associated with that. CBD helps to undo that by stimulating apoptosis in cancer cells.

But CBD does more than only stimulate apoptosis through the cannabinol receptors. It also has a direct anti-cancer action that has nothing to do with the receptors. Because of its uncontrolled growth, cancers often kill their victims by invading into and destroying healthy tissues and organs. But when scientists looked at the effect of CBD on the ability of glioma cancer cells to migrate and invade into surrounding tissues, they discovered something marvelous.

The researchers found out that CBD directly impaired the migration and invasion of these cancer cells in a dose dependent way. That means that the more CBD they added to the cancer cells, the less they were able to invade other tissues. And when they blocked the CBD receptors, they saw the same effect. That proves that the effect was not through the receptors, but instead was a direct anti-cancer effect. The authors concluded, "These results reinforce the evidence of anti-tumor properties of CBD, demonstrating its ability to limit tumor invasion..." Oh, and by the way, Barry's cancer is a glioma. So it's no wonder it worked so well.

But what about studies on cancers other than glioma? Other studies show that CBD has anti-cancer activity in lung cancer, hormonal cancers, melanoma, leukemia, colon cancers, thyroid cancer, prostate cancer, and both estrogen positive and estrogen negative breast cancers. In all of these cancers, CBD weakens cancer cells, making them more susceptible to chemo and radiation. And it decreases their ability to grow, invade, and metastasize. Additionally, every one of these studies shows that CBD does no harm to healthy cells.

So if you're battling cancer, no matter what course of therapy you decide to use, I can think of nothing easier and better for you than making CBD therapy a part of your plan. I've been using it routinely in all my cancer patients for the last 18 months. I have to say that my results are even better than they were before. And if you're like me and don't have cancer, I can't think of anything better to take than some CBD just for prevention. You will also sleep better, be calmer, have more energy, and have fewer aches and pains. Fighting cancer is only the tip of the iceberg for this therapy.

I've found that CBD is great for virtually anything that ails you. The list includes Crohn's disease, chronic pain, drug and alcohol addiction, chronic anxiety, insomnia, seizures, Parkinson's and other neurological dis-

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That's right! When you give babies eggs at the four-to-six-month interval, they will be on average about 56% less likely to develop an egg allergy than if you wait until they are older to give them the eggs. They found a similar result with peanuts. Introducing peanuts to four-to-six-month-old babies made them 29% less likely to be allergic to peanuts as they grew up.

According to the lead author of the study, Robert J. Boyle, MD, PhD, of Imperial College in London, "In an infant whose family usually consumes egg and peanut, we can be reasonably confident that delaying egg and peanut introduction increases the infant's risk for allergy to those foods." He goes on to say, "As long as there's no eczema or other sign of food allergy, then it seems reasonable to introduce egg and peanut when other complementary (solid) foods are introduced to the infant diet." The timing of the introduction of the other foods studied (gluten and fish) was not associated with any allergy risk, just peanuts and eggs.

Eggs are certainly one of the best foods we can feed our kids. Next to breast milk, eggs are the most complete protein you can eat. And be sure to give them the yolk. Much of the nutritional value of eggs is in the yolk. Eggs whites by themselves are virtually useless nutritionally speaking. Peanuts are also a great source of protein, vitamins, and minerals. So, don't hesitate to give your babies these foods when they reach that age of four-to-six months and start taking in solid foods. The biggest concern with peanuts at this age is choking. So consider giving them small amounts of organic peanut butter.

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Ierodiakonou, D., V. Garcia-Larsen, et al. "Timing of Allergenic Food Introduction to the Infant Diet and Risk of Allergic or Autoimmune Disease: A Systematic Review and Meta-analysis." *JAMA*. 2016 September 20;316(11):1181-1192.

"Preventing Food Allergies May Start in Infancy," *Medpage Today*, http://www.medpagetoday.com/AllergyImmunology/Allergy/60385?xid=nl_mpt_DHE_2016-09-24&eun=g415038d0r&pos=12.

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One Simple Solution to Infertility

Infertility is becoming a serious issue for many couples. The definition of infertility is when a couple cannot achieve pregnancy after one year of trying. The latest statistics according to the NIH (National Institutes of Health) are that 15% of American couples are infertile by this definition.

Furthermore, in healthy couples younger than 30 years old, as many as 80% are unable to conceive in the first three months. What is going on? Well, I hate to tell you men this, but it's not just a lady problem. Statistically, up to 60% of the problem is due to abnormal male function. And a brand new study points to one very easy solution.

The authors of the study searched PubMed, the National Library of Medicine website, and the Cochrane Library for studies that looked at whether or not the levels of zinc in the semen of men had anything to do with male infertility.

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eases, depression, high blood pressure, spasticity, migraines, Tourette's syndrome, glaucoma, and autism.

You can buy CBD products right now on the internet. All kinds of manufacturers are jumping on the bandwagon to provide CBD. But there's a big problem with this. Some of these products are worthless. So in a future issue, I'll explain why you have to buy your CBD from the right distributor. In the meantime, the form of CBD that I use in the clinic is called CBD Gel With Turmeric. You can get it at www.cbdformulations.com or by calling 800-230-1137. The dose will depend on what you're treating. Cancers often require high doses in the area of 3-5 ml, three times a day. For less serious problems, start with 1-2 ml of the gel one to three times a day. And then either lower or increase the dose as needed. You will often see effects in less than two weeks.

REFS;

Paola, Massi, Marta Solinas, et al. "Cannabidiol as potential anticancer drug." *Br J Clin Pharmacol*. 2013 February; 75(2): 303-312.

Shohami, E. and M. Horowitz. "Cannabinoids in Health and Disease." *J Basic Clin Physiol Pharmacol*. 2016 May 1;27(3):175-9. <https://youtu.be/1sMS-MD-aHM>.

Vaccani, A., P. Massi, et al. "Cannabidiol inhibits human glioma cell migration through a cannabinoid receptor-independent mechanism." *Br J Pharmacol*. 2005 April;144(8):1032-6.

How to Reverse Erectile Dysfunction Without Taking Testosterone

Erectile dysfunction (ED) is a problem that many men have. Although there are a number of different causes for ED, the one most men think about first is low testosterone levels. But I can tell you that more often than not, supplementing testosterone is not the perfect answer to ED. So is there a better way?

Researchers looked at 120 men aged 60-74 with ED. They divided the men into three groups. They gave the first group testosterone therapy. They gave the second group propionyl-L-carnitine (2 grams/day) plus acetyl-L-carnitine (2 grams/day). They gave the third group a placebo. Then they followed all three groups for six months.

Before the study started, during the study, and at the end of the study, the researchers checked the nocturnal penile tumescence in all the men. Nocturnal penile tumescence is a measurement of the ability to have an erection. They also checked PSA levels, prostate volume,

ultrasound measurements of cardiac function, International Index of Erectile Function score, Depression Melancholia Scale score, and fatigue scale score. Here's what they discovered.

The testosterone and the carnitine groups both showed a significant improvement in nocturnal penile tumescence, ultrasound cardiac measurements, International Index of Erectile Function score, Depression Melancholia Scale score, and fatigue scale score. But overall, the carnitine group performed better than the testosterone group where it counts. They showed a statistically significant greater improvement in nocturnal penile tumescence and the International Index of Erectile Function score than the testosterone group. And while the testosterone group had a significant enlargement of their prostates, there was no increase in the carnitine group. Neither group showed any increase in the PSA levels. The authors summed up the results this way, "Testosterone and especially carnitines proved to be active drugs for the therapy of symptoms associated with male aging."

And that's not all carnitines do. Propionyl and acetyl carnitine have positive effects on cardiovascular function as well as increasing lean body mass and enhancing fat metabolism. So, in many ways, these supplements mimic testosterone function. And now, this study shows that on average they outdo testosterone in sexual function.

You can buy these supplements in a product called Propel at www.life-enhancement.com. Take four capsules twice a day for at least three months. And, of course, because both testosterone and the carnitines improve sexual function, it's reasonable to assume that combining them might be more effective than using either alone.

REF: Cavallini, G., S. Caracciolo, et al. "Carnitine versus androgen administration in the treatment of sexual dysfunction, depressed mood, and fatigue associated with male aging." *Urology*. 2004 April;63(4):641-6.

Looking for an integrative physician near you? These organizations can help:

- American Academy of Ozonotherapy — <http://www.aaot.us>
- American Board of Clinical Metal Toxicology — For a free list, www.abcmto.org.
- International College of Integrative Medicine — www.icimed.com
- American College for Advancement in Medicine — 800-532-3688 or www.acam.org

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Then they looked at whether or not giving supplements of zinc to men with low zinc levels improved their sperm function. They found a total of 20 studies looking at these questions. When they added up all the data from these studies, they discovered an amazing thing.

First of all, they found out that the levels of zinc in the semen of infertile men was significantly lower than the levels in fertile men. But when the infertile men took zinc supplements, an amazing thing happened. According to the authors, "Zinc supplementation was found to significantly increase the semen volume, sperm motility, and the percentage of normal sperm morphology."

These findings point to the very strong likelihood that zinc deficiency is responsible for a lot of the male infertility that we're currently seeing. And that's not too surprising to me.

Many studies have already shown that zinc deficiency is very common. There are several reasons for this. I routinely look at nutrient levels in my patients and it's very common to see zinc come up as a deficiency. So here's some advice.

First, everyone needs to take a zinc supplement – whether you are an infertile male or not. I put 15 mg of the best form of zinc available, zinc picolinate, in every scoop of my Super Immune QuickStart powder (800-791-3395). And that's along with a very healthy supply of all of the other important herbs, amino acids, vitamins, and minerals that our bodies need.

Next, if you are a man who is infertile and who has some of the sperm abnormalities listed above, don't immediately go to the fertility specialist. Instead, try taking 15-30 mg of zinc picolinate every day for two months. Somebody might just be saying "Daddy" to you before long.

REFS:

<https://www.nichd.nih.gov/health/topics/menshealth/conditioninfo/pages/infertility.aspx>.

Zhao, J., X. Dong, et al. "Zinc levels in seminal plasma and their correlation with male infertility: A systematic review and meta-analysis." *Sci Rep*. 2016 March 2;6:22386.

LETTERS

Do You Have a Question for Dr. Shallenberger?

This page is your opportunity. Each month, Dr. Shallenberger tries to answer as many of your questions about health and medicine as he can. It's impossible for him to answer letters personally. And he obviously can't make a diagnosis or prescribe a treatment in these pages – or by mail or email. But if you have a question, please email it to feedback@secondopinionnewsletter.com or mail it to:

Second Opinion Letters

P.O. Box 8051
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Q: I have lymphoma. So I was just wondering what I should do? Having cancer and then, of course, side effects from chemotherapy add to the mystery of anything going on with my body right now. – *Brenda C., via email*

Dear Brenda,

There are all kinds of possibilities here. One of the most common side effects of chemotherapy drugs is fever and diarrhea with mucus. If that is the cause of your symptoms they will go away about a week after stopping the chemo.

Another possibility is that since both lymphoma and chemotherapy can suppress the immune system you might have developed an intestinal infection. Normally, culturing the stool will identify that.

Also, don't forget that certain supplements like vitamin C and magnesium can upset the bowels if the doses are too high.

So here's what I would recom-

mend. Stop the chemo and all your supplements for a week. At the same time, go on a vegetable and rice only diet and take a good probiotic, such as Advanced Probiotic Formula (800-791-3395), along with two capsules of charcoal (you can get this anywhere) three times daily. If the symptoms go away, the problem is probably from the chemo drugs. If they don't, it could be from the lymphoma.

By the way, let me very strongly recommend that you also consult a doctor trained in natural medicine. No one getting chemotherapy should be only following the advice of the oncologist. Almost none of them know anything about the many natural therapies that should be used while getting chemotherapy.

Q: You've talked a lot about inflammation. My doctor says my Hs-CRP is high. I know this has to do with inflammation, but how? And what should I do about it? – *Janet H., via email*

Dear Janet,

As you may know, uncontrolled and/or excessive inflammation damages the body and leads to chronic disease. Hs-CRP stands for highly sensitive C-reactive protein. The test is a good way to measure the inflammation in your body. It's inexpensive and very common. Any doctor can issue the lab work. The normal range for hs-CRP is less than 3 mg/L. But the healthiest level of inflammation yields an hs-CRP less than 1 mg/L. So please have your doctor check this test at least once a year. And if it's consistently more than 1 mg/L, it's in your best interest to do something to bring it down. And a recent study shows how having a diet high in polyphenols might be one of the best ways to

reduce inflammation.

The researchers looked at the effect of various polyphenols on the way our lymphocytes release cytokines. Lymphocytes are cells that control the immune system. When they're activated by an immune response, they release messenger molecules called cytokines. And many of these cytokines create inflammation. So, what the researchers did was to evaluate whether or not specific polyphenols and polyphenol mixtures would be able to decrease the inflammatory cytokine effect from activated lymphocytes. Here's what they found.

They compared 31 polyphenols and six polyphenol mixtures for effects on pro-inflammatory cytokine release by lymphocytes. They found that the following polyphenols were especially effective at reducing the inflammatory response: resveratrol, isorhamnetin, curcumin, vanillic acid, and certain specific polyphenol mixtures.

If you find that your hs-CRP is high, please take it seriously even if you feel great. Inflammation is like rust. You might not notice it, but it never sleeps and it's always working to break things down. Make sure you eat an abundance of the foods and spices so high in polyphenols. And as an addition, consider taking two tablets every day of Reduloxin (800-791-3395). This is a supplement that is highly concentrated with many of these polyphenols and is especially effective at lowering systemic inflammation.

REF: Ford, C.T., S. Richardson, et al. "Identification of (poly)phenol treatments that modulate the release of pro-inflammatory cytokines by human lymphocytes." *Br J Nutr.* 2016 May 28;115(10):1699-710.