



Dr. Shari Lieberman

Protocol Formulations
Phyto SkinScience

Dr. Shari Lieberman
Dedicated to the Scientific Pursuit of Better Health

September, 2003 Newsletter

Dr. Shari Lieberman's Nutritional & Integrative Therapy Review Newsletter

Welcome to my newsletter. Each month I review the cutting-edge research in the field of nutritional and integrative medicine and give you my commentary. At the end of each newsletter, I give a specific nutritional protocol for a specific disorder. The newsletters and nutritional protocols can also be found on my website. You may also visit my website to view my numerous PowerPoint presentations given at medical conferences and visit my Q & A, library and more. As an ongoing commitment to excellence in product development, my newsletter also allows you to view products I have developed and co-developed with leading experts all over the world.

- [1. The Use of Antioxidant Therapies During Chemotherapy](#)
- [2. Abnormal glucose tolerance and the risk of cancer death in the United States.](#)
- [3. Mercury Found in Tuna](#)
- [4. Timing of antioxidant vitamin ingestion alters postprandial proatherogenic serum markers.](#)
- [5. Fatty fish consumption lowers the risk of endometrial cancer: a nationwide case-control study in Sweden.](#)
- [6. Gerimax ginseng regulates both humoral and cellular immunity during chronic Pseudomonas aeruginosa lung infection.](#)
- [7. Nutritional Protocol for Breast, Prostate and other Cancers](#)
- [8. High potency Multi-Vitamin/Mineral Formula](#)



1. The Use of Antioxidant Therapies During Chemotherapy

Drisko JA, Chapman J, Hunter VJ, Gynecol Oncol. 2003;88:434-439

Abstract: It is accepted that antioxidants are useful in the reduction of adverse side effects of chemotherapy, although most oncologists believe that antioxidants reduce the effectiveness of chemotherapy and radiation therapy. There is evidence that antioxidants used alongside chemotherapy may help reduce tumor size and increase longevity. The concern regarding antioxidant therapies interfering with chemotherapy and radiation is the lowering of oxidative damage of chemotherapy by antioxidants, thereby reducing its effectiveness. Evidence supporting this mechanism is not present. Antioxidants act as biological response modifiers and can directly induce apoptosis in cancer cells. There is scientific evidence that antioxidants enhance the antitumor effects of chemotherapy in vitro and in vivo. Chemotherapy does not kill tumor cells by damaging essential biological functions but by initiating programmed cellular responses. The common antioxidants used during cancer treatment include mixed tocopherols and tocotrienols, beta-carotene, which includes natural mixed carotenoids, vitamin C and vitamin A. Antioxidants work in conjunction with each other to quench reactive oxidant species. Vitamin C at many times the Recommended Daily Allowance is a potent immunomodulator and has been found to be preferentially cytotoxic to cancer cells. Vitamin C enhances the activity of natural-killer cells in vivo and also enhances B- and T-cell activity. At doses in the gram range, it has been shown to increase survival time of patients with malignancies. Vitamin C may be killing cancer cells through the mechanism of intracellular generation of toxic hydrogen peroxide produced by the oxidized form of ascorbic acid, dehydroascorbate. Plasma saturation has been found to reach 80% at a 200-mg oral dose, and saturation has been observed at 1,000 mg/day. The goal of therapy is to attain vitamin C levels of >200 mg/dl given intravenously. In patients with malignancies, much higher doses are needed to kill cancer cells. Intravenous therapy can get the dose above 200 mg/dl, resulting in tumor cell cytotoxicity and with virtually no effect on normal tissue. The longer the plasma level is maintained above 200 mg/dl, the more effective the cytotoxic effect will be. Ascorbate plasma levels above 200 mg/dl, which would be cytotoxic to cancer cells, are not likely to be attained with oral regimens alone. Vitamin C has been shown to increase the activity of doxorubicin, cisplatin and paclitaxel. Natural mixed carotenoids in doses up to 20-40 mg/day have been shown to act synergistically with cisplatin. These amounts have been shown to increase cell differentiation in vivo, which promotes apoptosis of cancer cells. Human evidence suggests an inverse relationship between vitamin E levels and tumor incidence. Vitamin E has been shown to decrease the toxicity of chemotherapy without reducing its effectiveness. Retinoic acid and its derivatives can induce cell differentiation and growth inhibition in some cancer cell lines. High doses of retinoic acid may be taken for a specific period orally without fear of normal tissue toxicity. Retinoic acid shows benefit in combination with chemotherapy, and there is no evidence of reduced effectiveness of chemotherapy. Evidence is growing that antioxidants may be used with certain chemotherapeutic agents to enhance their effectiveness.

Commentary: I applaud Dr. Drisko's work. This is the second paper she and her

colleagues have written confirming that antioxidants should be given along with chemotherapy. I will also add that they should also be given along with radiation (as she also suggests in this paper). Another important fact is that cancer cells have abnormal membranes. When you take high levels of antioxidants orally or intravenously they will flood into cancer cells and cause their death. Since normal cells do not have these extremely abnormal permeable membranes - they are protected by these antioxidants since the antioxidants don't "flood" into the cell but are absorbed only to a certain degree. Dr. Drisko has also made the important distinction between natural and synthetic beta-carotene and vitamin E, in short, that only the natural forms should be used. Another form of vitamin E known as d-alpha-tocopheryl succinate was developed specifically to target cancer cells and the research has shown it to be very effective against many different types of cancer and synergistic with chemotherapy and radiation. It is important that oncologists get with the program and educate themselves in the science of antioxidants and their role in oncology rather than perpetuating the belief that antioxidants reduce the effectiveness of chemotherapy and radiation therapy. Nutrition is a science, not a religion based on belief.

[Return to Top](#)



2. Abnormal glucose tolerance and the risk of cancer death in the United States.

Saydah SH, Loria CM, Eberhardt MS, Brancati FL. Am J Epidemiol. 2003 Jun 15;157(12):1092-100.

Abstract: A prospective cohort study using data from the Second National Health and Nutrition Examination Survey and the Second National Health and Nutrition Examination Survey Mortality Study was done to determine the relationship between abnormal glucose tolerance and cancer risk. This analysis focused upon a nationally representative sample of 3,054 adults aged 30-74 years who underwent an oral glucose tolerance test at baseline (1976-1980). Deaths were identified by searching national mortality files through 1992. Two hundred and forty seven adults were classified as having either previously diagnosed diabetes, 180 as having undiagnosed diabetes, 477 as having impaired glucose tolerance, or 2,250 as having normal glucose tolerance. There were 195 cancer deaths during 40,024 person-years of follow-up. Compared with those having normal glucose tolerance, adults with impaired glucose tolerance had the greatest risk of cancer death, followed by those with undiagnosed diabetes and diabetes. These data suggest that, in the United States, impaired glucose tolerance is an independent predictor for cancer mortality.

Commentary: There are numerous studies that have identified abnormal glucose tolerance and insulin resistance as independent risk factors for cancer. This study even goes beyond this relationship. The data demonstrate that abnormal glucose tolerance is an independent predictor for cancer death. It is a well-known fact that cancer cells thrive on sugar (glucose). Yet how many oncologists tell their patients to avoid sugar? Aren't the commonly prescribed meal replacements like

Ensure loaded with sugar? Cancer patients who start to lose weight are usually told to "eat whatever they want" including cake, cookies, milk shakes - all the wrong foods that fuel cancer growth. They are also encouraged to eat very high-fat diets that are loaded with linoleic acid and arachidonic acid. These fats encourage the spread of metastases unlike omega-3 fatty acids from Fish Oil. The difference in how a cancer patient eats can be the difference between life and death. It is important to make sure that they are eating a low glycemic index diet (see my book *Dare To Lose*, Avery/Penguin Putnam 2003). This can be modified to increase calories and prevent weight loss by increasing the protein with meal replacements that are sweetened with sucralose and other more natural sweeteners that don't raise blood sugar (e.g. stevia, xylitol). Patients can also eat more of the low glycemic index carbs like beans, lentils, squash, sweet potatoes among others. Most type-2 diabetics also respond to diet and exercise intervention along with any or all of the following nutrients that can help normalize blood sugar, such as chromium (600-1000 mcg/day), Gymnema sylvestre (400 mg/day) and Glucosol 32 mg/day.

[Return to Top](#)



3. Mercury Found in Tuna

Nutrition Week, June 30, 2003;31(13):6. 40676

Abstract: : In this study, 60 cans of tuna bought from Trader Joe's, Safeway, Whole Foods and other food chains in and around Los Angeles, San Francisco and Montpelier were analyzed for their mercury content. Common name brands were chosen such as Bumble Bee, Starkist and Chicken of the Sea. Forty-eight of the 60 cans were tested. Sixteen of these cans contained 0.5 parts per million of mercury, which is double the "safe" level determined by the Environmental Protection Agency (EPA). Albacore or "white" tuna had more than 4 times the mercury on average than "light" tuna. Toxicologist evaluations stated that the Mercury Policy Projects calculations were accurate. For more information visit www.mercurypolicy.org.

Commentary: Like many of my colleagues, I stopped eating all meat many years ago including poultry. I then started eating lots of fish in addition to seafood and more canned tuna fish than I had ever eaten in my life. I took a 24-hour DMSA challenge test and found that my mercury levels were off the wall despite the fact that I take many dietary supplements (many of which chelate mercury and block its absorption). I never had a dental filling. I would highly recommend that all patients, even healthy ones, be screened for heavy metal burden or toxicity. High levels of mercury are very dangerous in pregnant women (so all women wanting to get pregnant should be screened - Ob-Gyn's are you reading this?) and they should be given advice about which types of fish are safer (like Alaskan salmon, most seafood and smaller fish like sardines). High mercury levels can suppress immune function, impair neurological function and are implicated in many illnesses including autoimmune disorders such as Multiple Sclerosis. Several studies have demonstrated that high mercury levels can cause "leaky brain syndrome," which is

very much like "leaky gut syndrome." That means that the brain membrane may become more permeable and allow toxins and neurotoxins to pass the blood-brain barrier more easily. Heavy metals such as lead, mercury and cadmium can be chelated orally or intravenously through various protocols. All labs that run these tests have the protocols available. Make sure you are also supplementing with plenty of minerals since many of the chelating agents are not so selective and also take out essential minerals.

[Return to Top](#)



4. Timing of antioxidant vitamin ingestion alters postprandial proatherogenic serum markers.

Carroll MF, Schade DS. Circulation. 2003 Jul 8;108(1):24-31.

Abstract: This study was designed to determine the optimal timing of vitamins E and C to prevent oxidative stress induced by a high-fat evening meal in type-2 diabetes. Euglycemia was maintained for 24 hours in 11 patients by insulin infusion. Participants were fed a high-fat test supper equivalent to a McDonald's Big Mac Meal. Blood was drawn for measurement of C-reactive protein (CRP), interleukin 6 (IL-6), plasminogen activator inhibitor-1 (PAI-1), malonyldialdehyde (MDA), and total radical antioxidant parameter (TRAP) before and during the 4 hours after the test meal. Studies were performed at random with vitamin E 800 IU and vitamin C 1 g given either before breakfast or before supper in a double-blind manner on the day of the test meal. There was a significant rise in CRP and PAI-1 after the test supper. Either presupper or pre-breakfast vitamins E and C prevented the meal-induced rise in CRP although presupper vitamins were more effective compared with prebreakfast vitamins. Only prebreakfast vitamins prevented the meal-induced rise in PAI-1. There were no significant meal-related changes in the concentrations of IL-6, MDA, or TRAP. The timing of administration of antioxidant vitamins has variable effects on markers of meal-induced inflammation and fibrinolysis. This observation may be one reason why cardiovascular disease prevention trials using these vitamins have reported conflicting results.

Commentary: Now don't go out and start eating Big Macs just because you're taking some vitamin C and E! This is a confirmation of earlier studies showing significant lowering of C-reactive protein (CRP) after the ingestion of a very high saturated fat meal. You may see a greater lowering of CRP with a higher saturated fat meal. Perhaps the participants consumed more dinner than breakfast and a higher fat meal at dinner, which may account for the great lowering of CRP. The authors hypothesize that the vitamin C was needed to regenerate the vitamin E in the evening. The PAI-1 was inhibited only at breakfast with the same nutrients which is an interesting observation. CRP is a significant risk marker for coronary artery disease. It is lowered by antioxidants and Fish Oil. And it is also lowered by losing weight if you are overweight. High body fat also raises CRP. Imagine a program of dietary intervention to lose weight along with exercise, antioxidants and Fish Oil. This could make a dramatic impact on cardiovascular risk and perhaps have a greater effect on lowering many risk factor markers of heart disease.

[Return to Top](#)



5. Fatty fish consumption lowers the risk of endometrial cancer: a nationwide case-control study in Sweden.

Terry P, Wolk A, Vainio H, Weiderpass E. Cancer Epidemiol Biomarkers Prev. 2002 Jan;11(1):143-5.

Abstract: The consumption of fatty fish, which contains large amounts of omega-3 fatty acids, may lower the risk of hormone-responsive cancers. Using data from a large, nationwide case-control study (709 cases and 2888 controls) in Sweden researchers analyzed consumption of both fatty (e.g., salmon and herring) and lean (e.g., cod and flounder) fish in relation to endometrial cancer risk. Consumption of fatty fish was inversely associated with endometrial cancer risk. Women in the highest quartile of consumption (an average of 2.0 servings per week), compared to women within the lowest consumption (an average of only 0.2 servings per week), had significantly reduced risk of endometrial cancer. There was no significant reduction of risk in women consuming the highest quartile level of lean fish compared to women consuming the lowest amount. The results suggest that the consumption of fatty fish, but not other types of fish, may decrease the risk of endometrial cancer.

Commentary: Fish Oil has a dramatic impact on reducing cancer risk as well as reducing the spread of metastasis in established cancer. Fish Oil is the richest source of eicosapentaenoic and docosahexanoic acid (EPA and DHA), which are responsible for the preventive and therapeutic effects of Fish Oil. Fish Oil inhibits angiogenesis thereby helping to cut off the blood supply to tumor cells and it protects normal cells against invasion. Fish Oil also reduces inflammation and its effects are even greater when combined with antioxidants. Cancer cells thrive in an environment of inflammation. Using Fish Oil capsules may be the safest way of getting EPA and DHA each day without the risk of mercury toxicity. Some Fish Oil supplements have on their labels that they are mercury free. You can always ask a company for a "Certificate of Analysis" that would indicate if in fact the product is mercury free.

[Return to Top](#)



6. Gerimax ginseng regulates both humoral and cellular immunity during chronic *Pseudomonas aeruginosa*

lung infection.

Song Z, Wu H, Mathee K, Hotiby N, Kharazmi A. J Alt Compl Med. 2002;8 (4):459-466.

Abstract: Chronic lung infection is common in patients with cystic fibrosis (CF), chronic obstructive pulmonary disease (COPD), acquired immunodeficiency syndrome, burn victims, other chronic bronchial disorders and immunosuppressed patients. The infection is often caused by *Pseudomonas aeruginosa* (PA). Despite chronic administration of antibiotics, PA may remain active in patients and can contribute to an increased risk of death. Chronic administration of antibiotics also results in antibiotic resistance. In response to PA, the body launches an antibody response. The side effects of this response are inflammation and lung tissue damage. Therefore, the goal of this study was to find a natural alternative that would treat the infection and not further lung damage. Rats were given the PA infection followed by subcutaneous injection of the ginseng extract and examined on days 7 and 21. There were 10 animals in each experimental group including 10 in a control group that received a saline placebo. Results demonstrated that the ginseng significantly reduced early and chronic PA infection. Ginseng helped the animals mount a significant immune response against PA compared to placebo. It helped their immune systems more effectively kill the PA without significant lung inflammation or pathology.

Commentary: Ginseng has a long history of use as an immune enhancer, adaptogen and recovery agent. It is often given to chronically ill patients in Asia to speed recovery from illness, cancer and surgery. The ginseng used in this study was made from a 40% ethanol extract and standardized to 8.5% ginsenosides. The brand name is Gerimax - but this is a common standardization of ginseng that is found through a variety of companies. Ginseng is one of the few herbs used in Traditional Chinese Medicine that can be taken as a single herb as a daily tonic. Studies have shown that ginseng can boost immune and brain function, increase energy, improve the body's defenses against stress (adaptogenic properties) and is active against a variety of bacteria and viruses. My only negative comment about this study is there should have been a group of rats that received the ginseng orally in their water or feed to demonstrate oral efficacy. One could argue that without this oral data, the effects may not be the same. It would have been an easy thing to do and was overlooked by the researchers. Ginseng is not generally used intramuscularly or intravenously.

[Return to Top](#)



7. Nutritional Protocol for Breast, Prostate and other Cancers

Many dietary supplements such as antioxidants, medicinal mushrooms, and Fish Oil have been shown to be beneficial for patients with cancer. These recommendations are for nutritional support only. They are not intended to replace any medical care. Be responsible – if you are under the care of a physician, please check with your doctor before starting the protocol. If you are interested in the scientific support for the use of some of the specific supplements, please visit my website (drshari.net) where you can view my presentations given at numerous national and international medical conferences. I have put a range for each supplement since you can often find several of them combined in multi-nutrient formulas by various companies and dramatically reduce the number of capsules/tablets you may need.

[Return to Top](#)



8. High potency Multi-Vitamin/Mineral Formula

These are approximate amounts found in some formulas (usually 4-6 per day).

Vitamin A and Beta Carotene	10,000-20,000 IU
Vitamin C (Ascorbic Acid (Coated))	500-1000 mg
Vitamin D (Cholecalciferol)	400-800 IU
Vitamin E (d-Alpha Tocopheryl Succinate)	400-800 IU
Thiamin (Vitamin B1)	25-50 mg
Riboflavin (Vitamin B2)	25-50 mg
Niacin (Vitamin B3 from Niacin & Niacinamide)	25-50 mg
Vitamin B6 (Pyridoxine HCl)	50-100 mg
Folic Acid	400-800 mcg
Vitamin B12 (Cyanocobalamin)	100-250 mcg
Biotin	50-100 mcg
Pantothenic Acid (Vitamin B5 from Calcium Pantothenate)	50-100 mg
Choline	10-25 mg
Inositol	10-25 mg
PABA	10-25 mg
Calcium (Carbonate, Citrate)	400-1000 mg
Iodine (Potassium Iodide)	50-150 mcg
Magnesium (Oxide, Citrate, Malate)	200-500 mg
Iron (optional)	8-15 mg

Zinc (Monomethionine)	22.5-30 mg
Selenium (Selenomethionine)	100-250 mcg
Copper (optional)	.05-2 mg
Manganese	5-15 mg
Chromium (Polynicotinate, GTF or similar)	100-200 mcg
Molybdenum (Amino Acid Chelate)	100-300 mcg
Vanadium	100-300 mcg
Boron	1-3 mg
Fish Oil Supplement	1500-4000 mg (4-6 capsules/day)
Additional Vitamin C	2000-4000 mg (or more as tolerated)

The following may be found in the Breast Care (BCF), Prostate Care (PCF) and Total Care (TCF) formulas or they may be found separately and you can see the best doses below. The BCF, PCF and TCF also provide an additional 400 mcg of selenium.

Convolvulus arvensis	1500-2000 mg
Quercetin	1500-2000 mg
D-limonene	500-1000 mg
Shiitake	250-500 mg
Green Tea	200-400 mg
Boswellia serrata	200-400 mg
Coenzyme Q10	200-400 mg
Lactobacillus sporogenes	100-200 mg
Maitake powder (10% D-fraction)	100-200 mg
Grape Seed Extract	50-100 mg
Lycopene	10-20 mg
BCF has additional Diindolylmethane	200 mg

PCF has additional:

Beta-Sitosterol	500 mg
Saw Palmetto	320 mg
Pygeum africanum	100 mg
Nettle leaf extract	100 mg

Dietary Considerations

Avoid high-fat foods, fried foods and processed foods. A high-fat diet can spread metastasis. Try to keep fat to 20% of calories. Sugar should be avoided - it fuels cancer cell growth. Try to eat as much certified organic food as possible. If you are losing weight, consider a high protein meal replacement that has no added

sugar or artificial sweeteners. The meal replacement can be sweetened with maltitol, sucralose or xylitol. VRP's Amino Edge comes in chocolate and vanilla flavors or there are many whey, soy and combination whey-soy protein powders available. Dr. Patrick Quillin's book, *Beating Cancer with Nutrition* is an excellent resource and can be found at most bookstores and on the internet. Changing your diet is an important part of both preventing and treating cancer.

Exercise

Exercise can both prevent and treat cancer. Exercise boosts immune function and studies have shown that it increases the lifespan of cancer patients. If you haven't been exercising, start slow - 5 minutes 3-5 days each week of an aerobic exercise such as walking, dancing, low-impact aerobic tape, treadmill, bicycle - whatever works best for you. Build up slowly by adding 1-2 minutes per week until you reach 30 minutes. You can also add strength training exercises using light weights or bands. Check with your health professional for specific advice before starting an exercise program if you have a medical condition or haven't exercised for some time.

Lifestyle

It may sound simplistic - but stress has profound adverse effects on immune function. While we can't always get rid of our stress it is imperative that we take steps to help our body withstand it. Meditation, prayer, stress reduction, biofeedback, visualization, massage, yoga - are just some of the choices to help our bodies recover and withstand the effects of stress.

[Return to Top](#)

