

# Cancer

## A Special Report

### The Hidden Science

by

**Thomas S. Ciraulo, MS, CL**  
Board Certified Holistic Health Practitioner  
Nutrition/Wellness Coach, Educator and Author of  
**“Learn The Simple Truth To Achieving Optimum Health”**

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**E-mail:** [healthcoach9@gmail.com/](mailto:healthcoach9@gmail.com) (516)-409-6978 / <http://www.abcssofhealth.com/>

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The following information is presented to help give you more ammunition in your fight with the war with Cancer. Some of the information in this report may be a little technical, but I feel that you should know about it and discuss it with your health care provider. Many of the products discussed in this report are presented with the scientific studies I found on [www.PubMed.gov](http://www.PubMed.gov).

This report is intended to present to the reader, natural alternatives, with their scientific support, to fighting cancer. If you would like to discuss any of the information in this report I can be contacted by calling (516) 409.6978 or via e-mail at [healthcoach9@gmail.com](mailto:healthcoach9@gmail.com).

I am going to start with the lymphatic system, which is a very integral part of your overall health.

Information on blood proteins of the blood and the role of the lymphatic system for removing them is quoted by Arthur C. Guyton in all 10 of his editions of "Textbook of Medical Physiology," which is utilized by major medical schools for teaching. It quotes:

"The lymphatic system represents an accessory route by which fluid can flow from the interstitial spaces (the space that surrounds your cells) into the blood. Most important, the lymphatics can carry protein and large particulate matter away from the tissue spaces, neither of which can be removed by absorption directly into the blood capillaries. This return of proteins to the blood from the interstitial spaces is an essential function without which we would die within about 24 hours."

When Dr. Guyton refers to blood proteins and other particulate matter; he is referring to the "lymphatic load" which consists of blood proteins, fat, fluid, cellular wastes and toxins. All these include your dust particles, tattoo dye (80% of which is absorbed into the (lymphatics), cancer cells, etc. Remember, these are the large particulates. When a woman or anybody has lymph nodes or vessels removed in surgery, there is no path for these particulates to drain into, so the trapped blood proteins attract water (because they are "hydrophilic") and this water then accumulates with the other wastes, causing tissue swelling, tightness, and eventually "lymphedema." Through manual lymphatic drainage and compression therapy, however, this fluid can be rerouted and the patients can learn to "drain" this fluid themselves. This technique now receives reimbursement through insurance companies with a ICD 9 and CPT codes! Many physicians don't know about the full impact of lymphedema, as many patients don't either, but they can contact the **National Lymphedema Network**, which now lobbies for legislation for coverage and has a site on the internet for cancer patients with lymphedema. Lots of info there for the cancer patient!

As far as the cells and cancer, look to Dr. Otto Warburg, Nobel Peace Prize Winner in 1931 and 1944, for his research published by the National Cancer Institute itself, on blood proteins (published in 1966) stating: that **the prime cause of cancer was "A LACK OF OXYGEN AND THAT CANCER CELLS CAN LIVE ON THE FERMENTATION OF GLUCOSE, WHICH OCCURS DUE TO THE LACK OF OXYGEN!"**

So, if you have the internal swamp of excess blood proteins, fats, cellular wastes and toxins (in other words, all that junk you dump into your body i.e.: additives, long chained fatty acids, tattoo dye, excessive salt etc.,) the

cells cannot receive oxygen and become deformed and eventually die. Another point to make is that all that junk draws the excess water, causes the swelling of the tissues and even creates a "greater diffusion distance", meaning that the oxygen and nutrients can no longer reach the dying cells and tissue, which leaves a person susceptible to fibrosis (arthritis for example) and infections when that part of the body is injured.

Dr. H.S. Mayerson of the Tulane Medical School in LA was the first to "tag" these blood proteins using radioactive iodine. He determined how much of the blood proteins actually passed from the blood stream into the lymphatics based on a 24 hour time period, which is 1/2 of the circulating blood proteins (again quoted by Guyton in his 10th edition). Dr. Mayerson published his findings in the AMA's publication "Today's Health" in 1964. Mayerson also went on to help establish the **International Society of Lymphologists** in 1966, whose members are now viewed as the leading medical pioneers of that field.

Research by members of the ISL have now found that the lymphatics, even when damaged, can be regenerated with high pressures of oxygen, lymphatic drainage massage, exercise, deep breathing, etc. to the extent that they create a "plexus" or new network of vessels, most without valves, but with the above techniques, you can move the fluid through the lymph system. What is so exciting is that if we begin treatment at the "cellular" level, instead of treating symptoms with radiation, surgery, etc., by good nutrition (live foods) no additives, no sugars, etc., we can reverse fibrosis seen in arthritis, decrease the symptoms of such dis-ease states such as muscular dystrophy, multiple sclerosis, etc. What we need to emphasize is that this is at the CELL LEVEL. Give the cell a nutritious, balanced environment, and it will function at optimum efficiency, you just have to remember to keep the solution it is in, CLEAN.

You have many options to help you keep your lymphatic system working at optimum efficiency. You can:

- a) Have a message therapist do lymphatic massage.
- b) Contact the **National Lymphedema Network, Latham Square, 1611 Telegraph Avenue, Suite 1111, Oakland, CA 94612-2138, Hotline : 1-800-541-3259 or 510-208-3200 Fax: 510-208-3110**
- c) Contact the **Lymphology Association of North America (LANA) at L.A.N.A., PO Box 35288, Charlotte, N.C., 28235-5288, USA, e-mail: to:<mailto:lane@snonet.org>**
- d) Contact the **Institute of Synergistic Arts and Sciences PO Box 1068 Springville, UT 84663 Phone: 801-491-9008**
- e) Call my office, **ABC's of Nutrition and Wellness 516-409-6978** to learn how you can do simple lymphatic and breathing exercises in the privacy of your own home.

I decided to split this report into two sections. The first section is called **Very Possible Solutions for Cancer** and the next section is **The Science** that supports the first section.

After doing extensive research I have decided to recommend the products mentioned in this next section, because of their potential benefits and the benefits that they have shown to me and to those who have used them. I believe in using products that work.

*If you know of similar products that have worked for you or anyone else with similar benefits, by all means use them. I have included this section to show you that there are things that can be used in the fight against cancer. Also keep in mind that since we are all individuals, what may work for some, may not work for others and in many cases many of the results may be dose dependant.*

## **Very Possible Solutions for Cancer**

The following are my personal product preferences. What you are about to read could very possibly save your life. I am going to go over the basics that everyone should follow. Anyone who has, had or even may be predisposed to cancer should, under the close supervision of his or her doctor, implement these **Very Possible Solutions for Cancer**.

You have to understand that the human body is a highly sophisticated piece of machinery. It has the ability to achieve and maintain optimum health. We, you and I, are the ones who prevent our bodies from working at its peak by what we put into our mouths, minds, and lungs. As far as the lungs are concerned, I am not talking about what is in the air that you have little to no control over.

The products and companies mentioned can be found in the **Resources** section immediately following the **Very Possible Solutions for Cancer**.

**There comes a time when something so revolutionary comes into your life that you have to tell the world about it. I know that this report is primarily loaded with scientific studies, but I had to include this information on Marine Phytoplankton. Marine Phytoplankton is one of the worlds oldest foods, yet the scientific community has not fully embraced it. I have and my clients have been using a product by ForeverGreen called FrequenSea™.**

**When I first learned of FrequenSea™ (Marine Phytoplankton) I informed one of my clients who at the time had a very aggressive form of breast cancer. I told her that I did not have much scientific support, but I told her that it may be a product that she should look into. That was over a year and a half ago and she still buys the FrequenSea™ month after month. She told me that she will be using the product for the rest of her life. To learn more about FrequenSea™ you can go to [www.myplankton.com/12548](http://www.myplankton.com/12548).**

**So, I present the following information for your review:**

The following is an excerpt from a report by Hugo Rodier, M.D.

...Let us now review the micronutrients contained in what I call a “super food:” FrequenSea™

Sea products	Sea plankton	Spirulina	Irish moss	Kelp
Bladderwrack	Frankincense essential oil	Omega 3	Omega 6	Nutmeg
Ginger	Aloe Vera	Astaxanthin	Cranberry	Blueberry
Morinda	Vitamins ABCDE	14 Amino acids		72 Trace minerals

### **LIFE FROM THE OCEANS, PLANKTON, TO SUPPORT LIFE**

The main product is Sea plankton, and the other Sea products (Spirulina, Irish moss, and Kelp.) Consequently, let us review these products in depth:

Life on Earth is made possible because of its atmosphere, and its topsoil. People, and all living creatures, owe everything they enjoy to these elements. Earth’s atmosphere and its topsoil were formed by microorganisms inhabiting our oceans, where from all life originated. Scientists at NASA theorize that about 3 million years ago, tiny microorganisms with the ability to convert energy, or light from the Sun, water and minerals into essential nutrients (amino acids, carbohydrates, vitamins, etc) marked the beginning of life on Earth. These microorganisms or “vegetation” from the oceans made it possible for all other life forms to originate.

We have an image in our minds of some amphibian crawling out of the ocean to begin life on firm land, forgetting that these creatures could not have survived on volcanic terrain, unless topsoil had first formed. They could not have adapted to life on Terra Firma, unless oxygen or a suitable atmosphere had developed prior to their migrating out of the primordial Seas. These two elements, air and topsoil, were formed through rain and floods, in preparation for ocean amphibians to immigrate out of the water, where all life started in the form of microorganisms. These microorganisms are commonly known as “algae” and “plankton.” Besides producing enough gases to form our atmosphere, and enough micronutrients and minerals to form our topsoil, these tiny organisms are rich and nutritious enough to feed huge mammals, such as whales. Blue whales, bowhead whales, baleen whales, gray whales, humpbacks, and right whales all eat plankton. These mammals live between 80-150 years, and stay healthy and strong throughout their lives. **The largest one, the whale shark, lives for over 150 years, grows up to 14 meters long, weighs up to 15 tons, and is sexually active until it dies.**

A new science, Environmental Microbiology, is making these vital facts better known to the public. The Journal Science (arguably the most prestigious scientific journal in the world) featured Environmental Microbiology on its front cover in 2002;294:1055.

Also, The Journal of Plankton Research provides monthly updates on the voluminous research taking place in this realm. Plankton are tiny open-water plants, animals, or bacteria. The name, like the word planet, is derived from a Greek root that means, “wanderer,” or “floating life.” These organisms range in size from microscopic bacteria and plants to larger animals, such as jellyfish. Plankton generally have limited or no swimming ability and are transported through the water by currents and tides. In the Chesapeake Bay, plankton communities serve as a base for the food chain that supports the commercial fisheries.

Most of the research into plankton has taken place in this area of the world, and in British Columbia, Canada. However, as noted below, the production of plankton in farms is making this super food readily available to all. Plankton can be divided into three major size classes:

- phytoplankton—microscopic plants and bacteria
- zooplankton—microscopic animals
- macrozooplankton—larger fish eggs and larvae and pelagic invertebrates

Plankton are often used as indicators of environmental and aquatic health because of their high sensitivity to environmental change and short life span. Phytoplankton are useful indicators of high nutrient conditions due to their propensity to multiply rapidly in the right conditions. Zooplankton are useful indicators of future fisheries health because they are a food source for organisms at higher trophic levels, such as finfish. Currently, research is being conducted in the Chesapeake Bay concerning how plankton react to different environmental conditions. The best growth occurs in the so called “spring bloom,” when many species of phytoplankton take advantage of the enhanced conditions provided at that time of the year.

### **Phytoplankton**

Like land plants, phytoplankton fix carbon through photosynthesis, making it available for higher trophic levels. The major environmental factors influencing phytoplankton growth are temperature, light, and nutrient availability. Phytoplankton growth is usually limited to the photic zone, or the depth to which sunlight penetrates the water. Other limitations to growth are nutrients such as nitrogen and phosphorous, which are prevalent in the Chesapeake Bay.

Phytoplankton can undergo rapid population growth or “algal blooms” when water temperatures rises in the presence of excess nutrients, which typically occurs each spring in the Chesapeake Bay.

While increased phytoplankton populations provide more food to organisms at higher trophic levels, too much phytoplankton can harm the overall health of the Chesapeake Bay. During these blooms, most of the phytoplankton die and sink to the bottom, where they decompose. This process depletes the bottom waters of dissolved oxygen, which is necessary for the survival of other organisms, including fish and crabs.

### **Major groups of phytoplankton in the Chesapeake Bay include:**

- diatoms ( phylum Bacillariophyta)
- golden-brown algae (Chrysophyta)
- green algae (Clorophyta)
- blue-green algae (Cyanophyta)
- dinoflagellates (Pyrrophycomphyta)
- cryptomonads (Cryptophyta)
- microflagelates (Prasinophyta, Euglenophycota, Protozoa)

Phytoplankton are being used as indicators of environmental conditions within the Bay because their populations are especially sensitive to changes in nutrient levels and other water quality conditions. A good picture of the current conditions in the Bay can be derived by looking at phytoplankton indicators such as chlorophyll, primary production rates, biomass and species composition. Satellite technology with color scanners detect high concentrations of chlorophyll in Chesapeake Bay, which are correlated with the presence of Plankton. One

gallon of Chesapeake Bay water may contain one half million plankton organisms. One drop may contain thousands. Algae are also known as Prokariotes, or, unicellular organisms without a nucleus. An example is Blue-Green algae, like Spirulina. Another type of algae is the Eukariotes, or unicellular organisms with a nucleus, such as Green and Red algae. Chlorella is a type of Green algae. Larger algae are known as seaweed. Kelp is perhaps the best known of them.

### **Modern technology**

While it is true that some algae are toxic, or soak up toxins from polluted ocean water, this is not a significant problem, since commercial algae for human consumption is grown in safe farms in British Columbia. This is a remarkable achievement, because people may now profit from these nutrient rich micro-organisms.

Spring bloom conditions are reproduced in a controlled environment year round in these farms. This increases the diversity and health of different species of phytoplankton, which make these products more powerful. The exclusive extraction process in these farms allows farmers to combine the benefits of phytonutrients with a natural and balanced composition of sea minerals.

Until now, people could not readily obtain such rich super foods. Through years of research, the Sea Farms can now grow these microorganisms in large quantities. These state of the art facilities allow the production of something very unique for you to maximize your health. The phytoplankton produce at Sea farms is not cyanobacteria, but true micro-algae, or plankton in its many forms and species. This, along with Sea Farm processing makes their product totally unique in the world.

### **The past and future of human nutrition is in the oceans**

**The micronutrients and electrolytes in plankton are exactly what human cell membranes need to carry out their metabolism. Not surprisingly, the composition of human plasma, or fluid surrounding cell membranes, is similar to that of seawater.** Relying solely on land-based food sources may lead to deficiencies in these micronutrients and electrolytes. While transient sub-optimal nutrition may be forgiven, a constant diet lacking in these micronutrients will adversely affect every function, structure, and detoxification functions of the human cell. As noted above, our metabolism will suffer, leading to practically all diseases.

**Good nutrition will enhance the structure and function of all organs in our bodies. Our brains, muscles, hearts, arteries, joints, bones, skin, hair, hormones, immune system, vision, digestion, kidneys, liver will carry out their jobs much better. Metabolically, our lipids, and sugars can be optimized, thus providing more overall energy, minimize weight problems, and improve sleep. These nutrients improve mental function, and memory. They reduce depression, harmful effects of stress, and mood swings.** Specifically, Spirulina (cyanophyta,) has 62% amino acids, or 20 times more protein than Soy and 200 times more than beef. It is also the richest source of vitamin B12, and it contains high levels of minerals, like Zinc. Spirulina has 10 times more carotenoids than carrots, and it is rich in xanthophyll pigments, like chlorophyll. It is also rich in oils, containing more omega 3s than fish oil, such as GLA. Plankton is also rich in polymeric, and basic healthy sugars, such as polysaccharides (J. Plankton Research 2005;27:695.)

Plankton also have an alkaline pH, which is important, given the acidity of our diets high in refined sugars, soda pop, and farmed large animals. The high density of nutrients found in algae is extremely important for many reasons. Perhaps the most important (as noted above) is that these nutrients maintain human cell membranes in structure and function. This is vital for cell detoxification, and for the overall metabolism of human cells. In fact, the causes of diseases have been simplified to very specific mechanisms, all of which center on cell membrane function and structure. Inflammation, Oxidation, Toxicity, and Mitochondrial dysfunction keep cell membranes from doing their job effectively.

**Algae contain high levels of antioxidants, and anti-inflammatory micronutrients to fuel metabolism and detoxification.** Also, they stoke the fires of the Mitochondria, where cells make energy required to carry out their function. Of course, photosynthesis is the mechanism whereby plants in general and algae in particular, harness life-sustaining solar energy. So, it is not surprising to find very good evidence that algae is highly beneficial (J. Applied Phycology 1993;5:235.) In my opinion, the enrichment of our cell membrane function, through nutrients, and the prebiotic function of algae are the most important contributions to our health from

these microorganisms. Prebiotics are rich fibers that feed our health intestinal flora (Chiba Hygiene College Bulletin, 1987:5#2, Japan.) It is precisely in the intestines where we find most of our immune, neurologic, and hormonal systems, the very systems our cells use to communicate through their cell membranes (“The intelligent intestine,” American J. Clinical Nutrition 2003;78:675.)

One of the most researched items on nutrition is the role of Iodine in all aspects of cell function. Its relative absence in the diets of Mountain populations is generally felt to be at the root of many health problems, particularly when it comes to Thyroid function.

Thyroid hormone is indispensable for practically all cell functions, especially in the brain. This is why populations living closer to oceans are generally healthier, and live longer (J. Environmental Health Perspectives, September 2003:111#12:A628, A638, A642.) Of course, algae, and fish in general, and phytoplankton in particular, are very high in Iodine content. This is another compelling argument for turning to this super-food.

### **Here are some specific benefits of Sea plants documented in the medical literature:**

- **It is an Immune system enhancer**, J. Nutritional Sciences and Vitaminology 994;40:431
- **It enhances macrophages**, J. Nutritional Immunology 1995;3:35, J. Immunopharmacology, January 1996.
- **It has anti HIV effects**, Journal National Cancer Institute, August 1989, page 1254.
- **Its phycocyanin stimulates hematopoiesis, or building of blood cells**, 2nd Asia-Pacific Conference on Algae technology, April 1994.
- **It makes Iron more available**, J. Nutrition Research 1986;6:85.
- **It decreases nephrotoxicity**, Annual Symposium Pharmaceutical Society, Japan, 1988
- **It was approved in Russia to treat radiation sickness**: 20 tablets for 45 days, Grodenski State Medical University, January 15th, 1994, J. Toxicology letters 1989;48:165
- **It has anticancer activity by increasing endonuclease enzymes to fix DNA damage** J. Nutrition and Cancer 1995;24:197, China J. Genetics 1988;15:374
- **Its polysaccharides enhance immune system**, 2nd Asia-Pacific Conference on Algae technology, April 1994 J. Agriculture Biol Chem 1983;47:2349
- **It treats flu virus**, J. Natural Products 1996;59:83.
- **Its Calcium-spirulan, a polymerized sugar, treats Herpes Simplex**, J. Phytotherapy Research 1993;7:76
- **It strengthens immune system in chickens, after they are weakened by antibiotics**, Proceedings 44th Western poultry Disease Conference, North Carolina, May 1995, J. Poultry Science 1994;73:46
- **Chlorella, or unicellular green algae may reduce AGE, or Advanced Glycosylated Endproducts, which are toxic metabolites resulting from consuming refined sugars.** Thus, Chlorella may improve Alzheimer’s disease (J. Medical Hypothesis 2005;65:953.)

The new sciences of Metabolomics and Environmental Microbiology are pointing the way back to the origins of life: algae and plankton. The future is quite bright for these rich food sources, since they promise to better sustain life itself. This is why **Jacques Cousteau said that “the future of nutrition is found in the ocean.”**

### **OTHER MICRONUTRIENTS IN “FREQUENSEA:”**

#### **Omega oils and Frankincense Essential oils**

Remember that our cell membranes are mostly composed of phospholipids, or fats. Most of our health problems are due to a breakdown in cellular communication, which lead to a lack of energy production at the cellular level. Consequently, the function and composition of cell membranes throughout our bodies are critical for our well-being. Since most people consume too many toxic fats (“Transhydrogenated fatty acids,” New England J. Medicine 2006;354:1601,) and not enough healthy fats, like Omega oils and essential oils, the stage is set for significant dysfunction in practically all conditions (J. Nutrition 2005;135:2075.)

This is why the oils in FrequenSea™ are so beneficial for practically all diseases. Most of the medical literature has focused on the effects of these oils on specific problems, like Neurologic/psychiatric issues, cardiovascular, arthritis, skin, cancer, hormones, etc. While this approach is quite revealing, it is short sighted: remember that by fixing our cell membranes you are fixing EVERYTHING about our function, and structure. In other words, you are

maximizing your ability to METABOLIZE at the cell level. You are reducing the inflammation, oxidation, mitochondrial dysfunction, and toxicity issues that compromise cell communication.

I will not repeat these simple concepts again. Suffice it to say I don't want to change the world; I just want to change your oil... No doubt this is what the Magi had in mind when they took Frankincense oil to baby Jesus. Back then, Frankincense was valued higher than gold. This was because of its medicinal value. Today's lack of healthy oils in our diet is staggering. For commercial and pharmaceutical purposes, oils have been demonized. Most people still shun anything with oils and fats, which is very distressing to our cells, particularly when people replace these items with the foods most heavily advertised, and most addicting: refined sugars. We still hear people condemning nuts, avocados, olives, and fish, because of their "fat."

## Herbs

"It is essential that practicing physicians develop a working knowledge of herbs and stay abreast of these emerging findings in order to best advise their patients on the value of health promoting diets in disease and prevention." American J. Clinical Nutrition 2003;77:1001S.

**Nutmeg:** This evergreen tree produces 2 spices, Mace and Nutmeg. They are not nuts. Nutmeg is high in antioxidants, which help heal indigestion problems. At high dose, nutmeg may be hallucinogenic. British Medical Journal 1970, page 744.

**Ginger:** The safest herb for indigestion, nausea, vomiting in pregnancy. It is used by everyone with intestinal, stomach problems. Scandinavian J. Gastroenterology 2006;41:155.

**Aloe Vera:** Very good for all kinds of mucosal problems that is skin and intestinal/stomach/sinuses lining cells. Aloe also has digestive enzyme activity. These are some of the reasons why Aloe is very effective against infections and wounds. J. Skin and Allergy News, April 2003, page 32.

## Foods high in antioxidants

**Astaxanthin:** This is one of the most potent antioxidants tested to date. Likely, we will see more marketing for xanthin supplements in the future. But, I prefer whole foods, like FrequenSea, which is always a better idea. Xanthins are high in coffee, cacao, and in fruits and vegetables, particularly the fruit juices listed below. British J. Nutrition 2005;93:773. One of the most important uses of Xanthins is decreasing inflammation and oxidation, thus improving immune system function. J. Biochem Pharmacology 2002;63:73.

**Cranberry/Blueberry:** No references are needed to show what has been known for a long time. Berries are the foods with the highest levels of antioxidants. Consequently, berries are great for any condition.

## "Super" fruit juice

Tropical fruit juices are being marketed quite a lot, and with good reason. They are high in polysaccharides, amino acids, antioxidants, anti-inflammatory agents, and digestive enzymes. As such, Morinda (J. Environmental Health Perspectives 2001;109:A469) has been shown to help practically all conditions.

## Micronutrients:

The super foods listed above end up supplying all your essential vitamins (ABCDE), 14 Amino acids, and 72 Trace minerals. Remember the role of nutrition in helping practically, all medical problems. **In many cases, these nutrients do lead to healing, which is amply demonstrated in nutrition-oriented practices like mine, and well supported in the medical literature. If only we could get people to read these articles...**

## Conclusion:

**FrequenSea™ is a super food. It contains practically all the nutrients necessary to sustain life.** You may be trying to rely on piecemeal information, and complicated nutrition/supplement regimens, such as multiple pills and capsules of isolated vitamins. Consider switching to FrequenSea™. This article emphatically

recommends that we use whole foods, not vitamin supplements (“Essential nutrients: food or supplements. Where should the emphasis be?” J. American Medical Association 2005;294:351.)

One of the main benefits of FrequenSea™ is to improve cell membranes. This will not only lead to better cell communication, and better metabolomics, but also to the repair of intestinal function. After all, the intestinal lining is made up of cells that may become “leaky,” thus compromising energy/nutrient absorption, and the elimination of toxins from the environment, and our own metabolism. The evidence for a nutritional approach is overwhelming. But, perhaps more credible, and practical, are the reports of many of my patients who report dramatic improvement in practically all their medical problems.

Give it a try.

**Hugo Rodier, M.D.**

Here is an excerpt from the report “**THE TRUTH ABOUT MARINE PHYTOPLANKTON**” written by the ForeverGreen company:

Below we have listed some of the products that claim to use marine phytoplankton. Upon careful review you can see how some of the common misconceptions and misuses of terms lead to confusion.

### **COMPARISON OF PHYTOPLANKTON AND ALGAE PRODUCTS**

**Spirulina** is blue-green algae and therefore is actually classified as Cyanobacteria. It is a simple, one-celled form of algae that grows in warm freshwater environments. Even though *Spirulina* is distantly related to the kelp algae, it is not a sea plant. The freshwater ponds and lakes it favors are notably more alkaline than ordinary lakes and cannot sustain any other forms of microorganisms. Spirulina is much like terrestrial plants except that it does not have a cellulose cell wall.

**Chlorella** is a form of unicellular green algae found in still, freshwater; soil, or bark of trees. Chlorella has a strong cell wall that prevents its native form from being adequately broken down and absorbed by the human digestive system and so special processing is required to break its cell wall.

**Kelp** are large macroalgae (seaweeds), belonging to the brown algae. Despite their appearance they are not grouped with the normal aquatic or land plants. Kelp grows in underwater forests (kelp forests) in clear, shallow, oceans, requiring water below about 20 °C; it offers a protection to some sea creatures, or food for others. Of the more common algae products currently on the market Kelp is correctly classified as a marine algae.

**Alpha 3 CMP™** (Condensed Marine Phytoplankton) is a unique nutrient-rich blend of marine phytoplankton harvested from the pristine temperate coastal waters of the Pacific Northwest. What makes these temperate waters an exceptional cauldron of life is the way in which ocean tides interact with fresh water, creating turbulence that draws even more deep water nutrients and supporting a diverse array of marine phytoplankton species. National Geographic, (Aug. 2006). The proprietary patent pending process harvests natural seawater, capturing the marine phytoplankton in million-liter tanks. This is the only known product to take natural marine phytoplankton communities containing a complete suite of marine trace elements in proportion to those found naturally in human tissue. Throughout this unique growing and harvesting process, quality control and testing is employed to ensure the highest quality product, providing assurance that no pathogens, toxins, heavy metals or contamination has occurred to the natural marine phytoplankton. The concentrated paste contains a variety of over 200 species (primarily from the larger, nutrient-rich *Bacillariophyceae* classification commonly known as diatoms). Through the harvesting process the Company’s patent pending proprietary technology breaks down the cellular walls, separating the silicate walls and releasing the nutrients that are otherwise encapsulated. This process, unlike any other known to man today, makes the nutrients immediately bioavailable. The raw paste at this point contains approximately 85% water. It next goes to a state-of-the-art phytopharmaceutical production facility, licensed and certified GMP (Good Manufacturing Processes) by Health Canada, where it is further concentrated, passing through the highest standard quality assurance procedures (sanitized and stabilized) to certify Alpha 3 CMP™ safe for human consumption.

**FrequenSea™ by ForeverGreen™** is a super food, exclusively employing the nutrient benefits found in Alpha 3 CMP™ for the network marketing industry. Combining the wholefood nutrition from both land and sea, **FrequenSea™ utilizes organic ingredients known to reawaken the body's natural healing power.**

In addition to the Alpha 3 CMP™, the following ingredients contribute to the amazing synergy of FrequenSea™:

**Frankincense Essential Oil:** An ancient healing art considered sacred in the Middle East and once more valuable than gold, it has been used for centuries to enhance the immune system, fight infections, and improve your mood as it relieves stress.

**Ginger and Nutmeg:** These well known spices aid the circulatory system and digestive tracts, contain strong anti-parasitic values and are rich antioxidants.

**Aloe Vera:** This “miracle plant” is anti-pyretic (reduces heat), anti-puritic (soothes itching), naturally hypo-allergenic with a perfect pH balance, revitalizes and improves tissue function at the cellular level, and moisturizes without closing off oxygen that is crucial to the repair process as it replaces lost fluids.

**Astaxanthin:** This is one of the most potent biological antioxidants extracted from marine micro-algae. These natural compounds are important nutrients and protectants for the skin and contribute to whole body health. Astaxanthin nourishes the eyes, brain, and central nervous system, increases strength and endurance, boosts the immune system, protects cells and mitochondrial membranes from oxidative damage, and supports a healthy cardiovascular system.

**Rose:** Clinical research shows that plant concentrates have the highest frequency of any natural substance. The higher the frequency, the more effective the plant is in warding off bacteria, viruses and fungus. Rose emits the highest frequency (320MHz). While roses have long been associated with soothing fragrances that calm the body, mind, and spirit with relaxing waves of positive energy, they also contain high amounts of Vitamins A and C, improve circulation, aid in liver detoxification, and provide an additional source of anti-inflammatory.

**A.M.P.™ Process:** ForeverGreen uses an exclusive, proprietary extraction process called **Aqueous Molecular Partitioning** (AMP) that allows the CO<sub>2</sub>- extracted plant materials to become water soluble, making it instantly bioavailable in the body. This process preserves the essential oils, resins and all the powerful antioxidant-rich phyto nutrients of the whole plant without the use of heat or nutrient-harming solvents.

**FrequenSea™ is an amazing ionic whole-food tonic, containing practically all the elements necessary to sustain a healthy life. Perfect in its organic composition, Hugo Rodier, M.D. calls it “Mother Earth’s Milk.”** Nature obviously provides the ultimate food source, offering the micronutrients necessary for cellular regeneration with the ability to detoxify our bodies of unnatural contaminants. The body is a self-healing mechanism and will perform miracles when we learn to honor its intelligence. Nothing honors the body like the proprietary FrequenSea™. © Copyright 2007. All rights reserved.

#### **Now for the Basic Causes of Cancer:**

- 1) Acidosis
- 2) Parasites
- 3) Elimination of oxygen in your cells
- 4) Excessive amounts of free radicals
- 5) Poor Nutrition
- 6) Congested colon

#### **Very Possible Solutions for Cancer:**

1) I found, in my opinion, a company whose products should be the front line of defense to every health program. Whether you have Cancer, Heart Disease, and Diabetes...or whatever health condition the medical profession is telling you that you have. You owe it to yourself to learn about the **HIGHLY AFFORDABLE PRODUCTS** from **Advanced Scientific Health (ASH)**. You can learn more by going to [www.EnjoyAHealthyLife.us](http://www.EnjoyAHealthyLife.us). I make this statement, because as you will learn in the **Resource** section of this report and on their web site, their products help in raising the pH level in your body and this is very critical to achieving overall health.

Remember to keep your body as alkalized as possible by drinking alkaline beverages and eating alkalizing foods. If you like coffee I recommend the coffee by **Gano Excel**. They infuse the Ganoderma Mushroom into their coffee, which has shown to bring the pH level to that similar to the pH level of our blood, 7.3 to 7.5, and yes; it does still taste like coffee. The Gano Excel coffee also has over 165 different antioxidants as well as vitamins, minerals and amino acids.

As you can see from the information on FrequenSea™ above it is a very intergral part of my nutrition program. As far as I am concerned the ASH products, the FrequenSea™ and the Gano Excel products represent the foundation to my nutrition program.

a) To help you in keeping your body more alkaline than acidic I found a product that may help from the company **Tidal Wave**. It is called **AquaLine Water-Enhancing Sachets**.

Each "tea-bag like" sachet contains 995 milligrams of coral fossils and will treat up to 1.5 quarts or liters.

When placed into drinking water or water-based beverages, the sachet will release beneficial ingredients like calcium, magnesium and other minerals in an ionic form for better absorption. All this while neutralizing most impurities, like chlorine and raising the pH level from an acidic to a more alkaline state.

Maintaining a proper, slightly alkaline pH level is considered the most important aspect of a healthy body. An imbalance of alkalinity creates a condition favorable to the growth of bacteria, viruses, yeasts and other harmful organisms. This combined with the accumulation of acid wastes are reported to be closely linked with degenerative disease, lack of vitality and aging in general.

One of the most impressive demonstrations is the power of the Aqua-Line sachet is a simple OTO test that can be performed using a widely available do-it-yourself pool test kit.

Aqua-Line sachets can neutralize the chlorine usually found in tap water. Untreated water will turn yellow after OTO drops are added, showing the chlorine content in the water. In just a few seconds after dropping a sachet into the water and stirring, the water will become clear, showing that the chlorine has been filtered through the sachet.

A good source to help you eat alkalizing foods is from **The Wholefood Farmacy (see Resources for the link to this site)**. They offer a wide variety of organic foods the whole family will love in easy and convenient packages.

The FrequenSea™ is also a very alkaline product and this is another reason that I use the product.

2) Take an anti-parasite product that contains: Black Walnut hulls, Pau D'Arco bark, Valerian root extract and Colostrum. These ingredients not only help get rid of parasites they also help your body eliminate yeast, which can be building up in your colon. Tens of thousands of people go undiagnosed every year with yeast infections. The yeast competes with the healthy bacteria in your colon, which can weaken your immune system. Dr. Hulda Clark has had tremendous success with hundreds of patients who had cancer. Simply by eliminating the parasites and by teaching them and having them follow a healthy lifestyle program. You can learn more about the **Dr. Clark** programs\ by reading her book, **The Cure for All Cancers**.

a) Another product that may be helpful in dealing with parasites is **Healose** from **NutriHarmony**.

b) The Mangosteen fruit (as found in **Cocogevity** from **Youngevity®**) has also shown to have anti-parasitic capabilities as shown with the parasite that causes Malaria.

c) For parasites you can also look into the **Model A** from **Wright Laboratories**.

3) Perform periodic deep breathing and lymphatic exercises on a rebounder (mini trampoline) as well as various localized lymphatic-stroking exercises daily. As stated earlier in this report, in 1966, Dr. Otto Warburg, who won the Nobel Peace Prize in 1931 and 1944, gave a lecture at the annual meeting of "Nobel Prize Winners" in Lineau, Germany. He stated that, **THE PRIME CAUSE OF CANCER WAS THE LACK OF OXYGEN. CANCER CELLS LIVE ON THE FERMENTATION OF GLUCOSE DUE TO THE LACK OF OXYGEN.** Lymphatic exercises help to remove trapped blood proteins and toxins that are preventing and/or minimizing the oxygen from getting to your cells.

4) Consume antioxidants. That is why I am highly recommending the **Ganoderma Lucidum and Excellium products** from **Gano Excel**, the **Cocogeivity** from **Youngevity®** and **Farmacy Pro Power** from **The Wholefood Farmacy**. There are more, but you can decide for yourself when you visit the web sites in the **Resources** section.

5) Eat more raw (uncooked) **organic** green leafy vegetables and or take food concentrate supplements like **Garden and the Greens™** from **NutriHarmony** or **Farmacy Pro Power** from **The Wholefood Farmacy** and **Coconut Oil**. Besides chlorophyll, which helps clean the blood, foods also contain many antioxidants and the highly effective Spirulina as mentioned in the abstracts above. (My mother had breast cancer and her doctor at first recommended that she go on tamoxifen until I did some research and found out that it has only a 50 percent success rate and approx. 3 percent of women on tamoxifen develop uterine cancer. Coconut Oil provides medium-chain triglycerides, which studies have shown to be very beneficial for cardiovascular health.

a) Eat more **organic** (uncooked) fruits. I recommend **organic** because after reading the three different articles above I feel that the less pesticides that you consume the better you will be. I found that **The WholeFood Farmacy** has made eating organic whole foods simple, easy, and convenient. The Wholefood Farmacy has created a product, which you could basically call a One Stop Shopping Product, called **Farmacy Pro Power**. **The Farmacy Pro Power** contains your greens, and vegetables and enzymes and beneficial bacteria and more. It contains **8.5 billion pro-biotic cultures, Antioxidants equal to 8 to 10 servings of fruits and vegetables**. The product was formulated to help support your **Immune System, Digestive System, Enhance Energy**, help with **Cellular Repair**, and help you **Age Gracefully**.

6) Once again I am going to tell you to **STOP IMMEDIATELY ALL CONSUMPTION OF MILK, ICE CREAM AND CHEESE**. That's right. Stop drinking milk and eating cheese, ice cream and yogurt. I know this may sound a little radical, but think about this for a moment. A mother cow is about 1,000 to 1,400 pounds and its main role is to feed its milk to its young to help it grow to over 1,000 pounds. Think about the powerful growth hormones that this milk contains. It has not been found that milk causes cancer, but the powerful growth hormones do help it to grow and grow and grow. Even organic milk has these powerful growth hormones.

**Also found in non-organic milk are countless antibiotics, pesticides and artificial growth hormones.** Because of all of the infections a cow gets, you are drinking and/or eating millions of puss cells with every glass of milk or every piece of cheese that you consume. Did you know that it takes ten pounds of milk to equal one pound of cheese? So, the next time you eat that piece of cheese; just think of the concentration of growth hormones, antibiotics, pesticides, and pus that you are putting into your body.

**Note on Dairy consumption.** Recent studies are saying that milk may help with colon cancer. Actually, the studies are saying that it is the calcium that may be the beneficial ingredient. **Other studies are saying that milk consumption may promote ovarian and prostate cancers as well as other cancers.** My suggestion would be to get yourself a GOOD calcium supplement if you're concerned with the colon cancer and **STAY OFF OF ALL DAIRY PRODUCTS except for Whey**. **Based on what I have learned I recomend the Ion-Exchange Whey Protein from NutriHarmony.**

7) Make sure you start and maintain a good nutrition program that includes vitamins, antioxidants, major, trace and ultra trace minerals and anti-inflammatory nutrients. If you are taking a vitamin supplement now, does it have at least 65 trace minerals along with antioxidants and vitamins along with anti-inflammatory properties? If not, find one. The most efficient and effective way to consume a vitamin supplement is in a liquid form. It is the most absorbable by your body. Plus many people do not like to take pills all day. That is why I recommend the **Ultimate Classic** or the **Tangy Tangerine** from **Youngevity**. They provide a complete balance of nutrients in a very bio-available form.

8) Increase the amount of fiber that you put into your diet and take a colon cleanser like **Colon Plus** from **Ancient Legacy**. Many studies link an unhealthy colon to countless diseases. Fiber helps absorb many unwanted toxins as well as helps your body remove unwanted waste. When you go to your local health store or even the Internet you will see that there are many other high fiber and colon cleansing products on the market. Determine which one would be best for you and **USE IT**.

8 a) Take a digestive enzyme supplement to help your body minimize material that can congest your colon. In many cases this poorly digested material can reduce your body's ability to absorb nutrients as well as increase your

chances of disease. Digestive enzymes help your body digest your food by replacing the natural enzymes (Protease for proteins, Amylase for carbohydrates Lipase for fats and Cellulase for plant fiber) found in raw foods that are destroyed by heat (cooking). I recommend **Tidal-Zyme** from **Tidal Wave**. **Tidal-Zyme contains: enzymes, FructoOligoSaccharides, and Probiotics.**

8 b) Take a **Ganoderma Lucidum** supplement to help support your immune system. I use the Ganoderma Lucidum from **Gano Excel**. They have the largest organic Ganoderma Lucidum plantation in the world.

8 c) Take a supplement to help support the good bacteria in your colon like Fructo-oligosaccharides, a carbohydrate, which helps the healthy bugs (good bacteria), flourish. You should also take a good beneficial bacteria product, which can be found in any health food store.

9) Use filtered water even in the shower. Many municipalities put chlorine and fluoride in their water supply, plus depending on you plumbing system you water may be leaching lead from you pipes. To help avoid this you can buy a water filtration system like the **Countertop Water Processor** from a company called **Tidal Wave**. **Tidal Wave** also has a shower model called the **Deluxe Shower Head**. I recommend the Deluxe Shower Head, because your skin can absorb many of the impurities that are found in the water, which can add to ill health.

For those of you who have the money, the water distillers from **John Ellis** may help in achieving you goal of optimum health. To learn more about the John Ellis water treatment systems you can go to his web site listed in the resources below.

10) Take a supplement to help support the good bacteria in your colon like Fructo-oligosaccharides, a carbohydrate, which helps the healthy bugs (good bacteria), flourish. You should also take a good beneficial bacteria product, which can be found in any health food store. A good product would be **Tidal-Zyme** by **Tidal Wave**.

There are a number of benefits that go along with these friendly bacteria:

- Vitamin production specifically B2, B5, B6, B12, folic acid, biotin and niacin.
- Decrease in lactose intolerance because of the enzyme lactase.
- Lower cholesterol levels
- Defense against food poisoning
- Inhibition of Candida, yeast and other fungal forms
- Healthier looking and feeling skin
- Better absorption of foods because of the enzymes they produce
- Increase in peristalsis (wave of contraction that moves food through the colon). Normalizes bowel movements.
- Increase in immunity through the secretion of acids and natural antibiotics.
- Help maintain a good hormonal balance.

I found an excellent source from **Bio Lumin Essence** called **Nightly Essence**. Their product contains 14 different types of beneficial bacteria along with enzymes, minerals, and antioxidants.

11) Last, but not least, **Drink Plenty of Water. Not Just Any Water**. I highly recommend the energized water from the **Crystal Clear Electron Air/Water Machine**, either the **LWM Electron 4** or the **LWM Electron 5** from **John Ellis** (see link below). For those of you on a smaller budget the Water Filters from **Tidal Wave** may suit your needs.

### **Resources:**

There are countless companies with countless products that can help you in your quest to maintain optimum health. To help you in your search I put together a list of companies and their products that I feel would help you in your quest for optimum health.

[www.PubMed.gov](http://www.PubMed.gov): This site is to provide you with the science that is available to educate you and your health professional.

[www.abcsofhealth.com](http://www.abcsofhealth.com): If you have any questions or concerns regarding the information in this report and for all product referrals.

[www.EnjoyAHealthyLife.us](http://www.EnjoyAHealthyLife.us): Regardless of your current health condition, I truly feel that the products offered by **Advanced Scientific Health** should be the foundation to your health program.

**Products to look for on this site:**

- **No Fool I**-This product has the ingredients that can help build and maintain one of the body's primary building blocks, collagen. It is critical that our bodies have an ample supply of collagen.
- **Master Formula II**-Otto Warburg won a Nobel Prize for showing that cancer thrives in anaerobic (without oxygen), or acidic, conditions. Research by Keith Brewer, PhD and H.E. Satori has shown that raising the pH, or oxygen content, range of a cell to pH 8.0 creates a deadly environment for cancer. The pH scale ranges from 0 to 14, with numbers below 7 representing an acidic condition and above 7 representing an alkaline, or oxygenated, condition. When Master Formula II is taken up by cancer cells, it raises the pH, or oxygen content, of the cell. The cells that die are absorbed and eliminated by the body. There is a solution and it's a Nobel Prize Winning proven formula - Master Formula II. Master Formula II is designed to raise the pH level, increase the oxygen supply in the body, kill existing cancer cells, and prevent new cancer cells from forming.
- **Raanow**-People with high pH (oxygen), high GH, and high ascorbate live longer, stronger, slimmer, healthier lives. Learn these basics and age reversal will become obvious to you.
- **Cesium**-Cesium has been used to raise the pH of the body as an alternative cancer treatment of therapy for breast cancer, lung cancer, prostate cancer, colon cancer, pancreatic cancer, liver cancer, skin cancer, ovarian cancer, stomach cancer, cervical cancer, brain cancer, kidney cancer, testicular cancer, bone cancer, throat cancer, thyroid cancer, gastrointestinal cancer, cancers of the bladder and gallbladder, metastatic melanoma, and cancers in animals including feline, canine, and equine cancer.

[www.MyPlankton.com/12548](http://www.MyPlankton.com/12548): This site gives you a little insight into how the healthful benefits of the marine phytoplankton was discovered. After viewing the video you will have the option to go to the ForeverGreen web site.

**Products to look for on the ForeverGreen site:**

- **FrequenSea™**-a complete super food.
- **24 Karat Chocolate**-For those of you who love dark chocolate and want the benefits of a high antioxidant food, you will love the 24 Karat Chocolate products. They also have delicious weight loss products.
- **Food First-Pulse**-ForeverGreen has put together a line of wholefood nutritious snacks that everyone will enjoy.
- **EarthTribe Farmacy**-Products developed for those looking to implement a preventive program.
- **ForeverYoung Essential Oils**-Individual oils to special blends.
- **Personal Transformation**-Personal hygiene products.
- **Healthy Alternatives**- Probiotics and other products to help support and immune function.

[www.BuyHealthyCoffee.us](http://www.BuyHealthyCoffee.us): This site is for the Gano Excel products including the Ganoderma Lucidum as well as their healthy coffee. I recommend their coffee, because it is non-acidic with over 150 different antioxidants, vitamins, minerals, and amino acids. They also infused the Ganoderma Lucidum into tea and hot chocolate.

**Products to look for on this site:**

- **The Gano Coffee Line of Products**
- **Ganoderma Capsules**-contains the adult ganoderma lucidum plant.
- **Mycellium Capsules**-contains (Excellium) the young ganoderma lucidum plant.

Actually, I like their whole line of products. So, when you go to their web site you could decide for yourself the products that would be best for you and your family.

[www.GetHealthyNow.us](http://www.GetHealthyNow.us): This web site represents six different companies: **Youngevity®**, **Ancient Legacy™**, **Supralife®**, **Bio Lumin Essense™**, **NuVANTE™** and **Tidal Wave™**. These companies offer a diverse line of quality products, but I am only highlighting those products that I feel you should look at first. Once you visit these companies you can decide which products would be best for you and your family.

**Products to look for by Youngevity®:**

- **Ultimate Classic**-For those of you who do not like to take pills this product is a viable alternative. It is complete with vitamins/minerals/amino acids and more
- **Tangy Tangerine**-Similar to the Ultimate Classic
- **Mineral Make-up**-The Youngevity Mineral Make-up, I call it Healthy Make-Up, has no chemicals, dyes, preservatives, talc, or bismuth. It is fragrance free and non-comedogenic and it is not tested on animals.
- **Cocogeivity**- contains Dark Chocolate, Mangosteen, Goji and Acai in a delicious drink.
- **Noni Goose Juice®**- is a blend of more than 70 organic plant derived liquid minerals and Polynesian Noni. Chinese Green Tea, and a proprietary blend of Tropical Fruit Extract.
- **Noni ++™**-contains Morinda Citrifolia and the Youngevity® Minerals
- **Plant Derived Minerals**-contains approximately 77 plant derived minerals.
- **Rebound FX™**-Sometimes cancer treatment programs can tire you out. When that happens drink **Rebound FX**:
  - **Highly Absorbable Liquid Supplement**
  - **Supports Healthy Exercise**
  - **Promotes Optimal Well-Being**
  - **Supports Healthy Heart Function**
  - **Supports Cardiovascular Health**
  - **Supports Immune System Health**
  - **Boosts Stamina and Energy**
  - **Promotes Healthy Bones**

**Products to look for by Ancient Legacy™:**

- **Colon Plus™** - Colon Plus is an herbal combination to enhance colon health and support the body's natural ability to function on its own. It stimulates the muscular movement of the colon and over time strengthens the muscles around the large intestine, halts putrefaction and disinfects, soothes and helps protect the mucous membrane lining of your entire digestive tract.
- **Essential Oils**

**Products to look for by Supralife®:**

- **Enzyme Plus**-contains plant based digestive enzymes and Betaine HCL. (Betaine hydrochloride is a non-essential nutrient and a source of hydrochloric acid, a naturally occurring chemical in the stomach that helps digest food by breaking up fats and proteins. In particular, Betaine HCL is necessary for adequate absorption of protein, calcium, vitamin B12, and iron. It is also known as hydrochloric acid and stomach acid.) There are many people who get indigestion due to a reduced amount of hydrochloric acid in their stomach. Taking the **Enzyme Plus** with the Betaine HCL may help.
- **Sugar-Eze**-Nutritional Support For Glucose Metabolism
- **Immu-911**-Nutritional Support for the Immune System

**Products to look for by Bio Lumin Essense™:**

- **Daily Essense**- Daily Essense is a unique and complete blend of Digestive Enzymes, Vitamins, Minerals, Superfoods, and Antioxidants all in one product.
- **Nightly Essense-Probiotic Formula**- Nightly Essense utilizes a blend of the latest cutting-edge systemic enzymes along with a complete panel of 14 different strains of probiotic bacteria.

**Products to look for by NuVANTE™:**

- **Skin Care**
- **Sun Care**
- **Hair Care**
- **Women's Sexual Health**

**Products to look for by Tidal Wave™:**

- **AquaLine Water-Enhancing Sachets**
- **Water Filters: Shower Head Unit, Counter Top Unit and Under Sink Unit**
- **Tidal-Zyme-Digestive Enzyme and Pro-biotic supplement**

[www.NutriHarmony.com/healthy1](http://www.NutriHarmony.com/healthy1): If you are looking for whole-food supplements where the vitamins and minerals are made from plants and not in a lab, this is the site for you.

**Products to look for on this site:**

- **MRP (Meal Replacement Product)**
- **Garden and the Greens™**
- **Colonique™**
- **Healose™**
- **Real Food™ Multi-Vitamin/Multi-Mineral**
- **Ion-Exchange Whey Protein**
- **Enzymes**
- **Elemental Fiber™**

[www.MyWholeFoodFarmacy.us](http://www.MyWholeFoodFarmacy.us): The first thing you should do when you get to this web site is to scroll down and watch the 22-minute video, especially if you are concerned about cancer. **The Wholefood Farmacy** is a must for those looking to eat foods that can enhance their health. You owe it to yourself and loved ones to learn and experience the foods offered on this web site.

**Products to look for on this site:**

- **Wholefoods**
- **Wholefood Beverages**
  - **Stardust 2 Hydr8- Stardust 2 Hydr8** offers you all of the benefits of a saline or electrolyte solution without any needles or artificial additives. It is made from pure salt and bicarbonate which are the main components of extracellular fluid. Stardust 2 Hydra8 is mixed one tea spoon to a gallon of water creating a mildly saline solution - also referred to as an "electrolyte solution". Stardust 2 Hydr8 is a great way to help your body to operate at peak performance and to maintain proper hydration.
  - **Farmacy Pro Power**
- **Soups**
- **Bath & Beauty**
- **Salt, Spices and Food Oils**

[www.JohnEllis.com](http://www.JohnEllis.com): This is the site where you can learn more about and/or buy the **LWM Electron 4** This machine is the same as LWM ELECTRON 3 but with levels 15 times higher (with CORNING tm) in passing vapor through an air gap and the LWM Electron 5 is the same as Electron 4 except with twice the oxygen and electron output with two bulbs and a more powerful transformer!! John sells the **LWM Electron 4** for \$1,700.00 and the **LWM Electron 5** for \$2,800.00. I worked out special pricing for my clients. When I place the order John will allow you to buy the **LWM Electron 4** for a discounted price of \$1,600.00 (\$100.00 savings) and the **LWM Electron 5** for a discounted price of \$2,600.00 (\$200.00 savings).

[www.jwllabs.com](http://www.jwllabs.com): As I mentioned earlier Wright Laboratories offers the Royal R. Rife technology with their Model A. To contact Wright Laboratories call their Custom Service Department: **1-888-891-1122**. **If you decide to purchase their Model A, be sure to mention my name, Thomas Ciraulo for a FREE CD of your choice, a \$49.95 value.**

## **The Science**

Hear is some information that may be contrary to what you have heard over the years. Speak to your healthcare provider before you drink another glass of milk or eat another piece of cheese or yogurt. I have done a lot of research to find you **clinical studies to show you that science is finding that milk DOES NOT do a body good**. Here is why:

The following references provide converging lines of evidence that focus upon one central point.

There are hundreds of millions of different proteins in nature, and only one hormone that is identical between any two species. That powerful growth hormone is insulin-like growth factor, or IGF-I. IGF-I survives digestion and has been identified as the KEY FACTOR in breast cancer's growth. IGF-I is identical in human and cow.

Br J Cancer. 2007; 96 Suppl:R2-6. **Republished from:** Br J Cancer. 2005 Jun 20; 92(12):2097-101.

**Role of insulin-like growth factor 1 receptor signalling in cancer.-Larsson O, Girnita A, Girnita L.**

**Department of Oncology and Pathology, CCK R8:04, Karolinska Hospital, S-171 76 Stockholm, Sweden. [olle.larsson@onkpat.ki.se](mailto:olle.larsson@onkpat.ki.se)**

**The insulin-like growth factor (IGF-1) signalling is highly implicated in cancer.** In this signalling the IGF-1 receptor (IGF-1R) is unquestionable, the predominating single factor. IGF-1R is crucial for tumour transformation and survival of malignant cell, but is only partially involved in normal cell growth. This is in part due to the interactions with oncogenes. Recent findings suggest a close interplay with the p53/MDM2 pathway. Disturbances in components in the p53/MDM2/IGF-1R network may cause IGF-1R upregulation and growth advantage for the cancer cell. Targeting of IGF-1R is more and more seen as a promising option for future cancer therapy. Single chain antibodies and small molecules with selective effects on IGF-1R dependent malignant growth are of particular interest. Forthcoming clinical trials are welcome and will indeed be the only way to evaluate the impact of IGF-1R targeting in human cancer. PMID: 17393577 [PubMed]

**Cancer Epidemiol Biomarkers Prev. 2007 Mar;16(3):598-605.**

**Direct inhibition of insulin-like growth factor-I receptor kinase activity by (-)-epigallocatechin-3-gallate regulates cell transformation. Li M, He Z, Ermakova S, Zheng D, Tang F, Cho YY, Zhu F, Ma WY, Sham Y, Rogozin EA, Bode AM, Cao Y, Dong Z.**

Hormel Institute, University of Minnesota, 801 16th Avenue Northeast, Austin, MN 55912, USA.

**Insulin-like growth factor-I receptor (IGF-IR) has been implicated in cancer pathophysiology.** Furthermore, impairment of IGF-IR signaling in various cancer cell lines caused inhibition of the transformed phenotype as determined by the inhibition of colony formation in soft agar and the inhibition of tumor formation in athymic nude mice. Thus, the IGF-IR might be an attractive target for cancer prevention. We showed that the tea polyphenol, (-)-epigallocatechin-3-gallate (EGCG), is a small-molecule inhibitor of IGF-IR activity (IC50 of 14 micromol/L). EGCG abrogated anchorage-independent growth induced by IGF-IR overexpression and also prevented human breast and cervical cancer cell phenotype expression through inhibition of IGF-IR downstream signaling. Our findings are the first to show that the IGF-IR is a novel binding protein of EGCG and thus may help explain the chemopreventive effect of EGCG on cancer development. PMID: 17372258 [PubMed - in process] **NOTE: One place EGCG can be found is in green tea.**

**Pharmacol Res. 2007 Feb 3;**

**Doping with growth hormone/IGF-1, anabolic steroids or erythropoietin: is there a cancer risk? Tentori L, Graziani G.**

Department of Neuroscience, University of Rome "Tor Vergata", Via Montpellier 1, 00133 Rome, Italy.

Anabolic steroid and peptide hormones or growth factors are utilized to increase the performance of athletes of professional or amateur sports. Despite their well-documented adverse effects, the use of some of these agents has significantly grown and has been extended also to non-athletes with the aim to improve appearance or to counteract ageing. Pre-clinical studies and epidemiological observations in patients with an excess of hormone production or in patients chronically treated with hormones/growth factors for various pathologies have warned about the potential risk of cancer development and progression which may be also associated to the use of certain doping agents. Anabolic steroids have been described to provoke liver tumours; growth hormone or high levels of its mediator insulin-like growth factor-1 (IGF-1) have been associated with colon, breast, and prostate cancers. Actually, IGF-1 promotes cell cycle progression and inhibits apoptosis (cell death) either by triggering other growth factors or by interacting with pathways which have an established role in carcinogenesis and cancer promotion. More recently, the finding that erythropoietin (Epo) may promote angiogenesis and inhibit

apoptosis or modulate chemo- or radiosensitivity in cancer cells expressing the Epo receptor, raised the concern that the use of recombinant Epo to increase tissue oxygenation might favour tumour survival and aggressiveness. Cancer risk associated to doping might be higher than that of patients using hormones/growth factors as replacement therapy, since enormous doses are taken by the athletes often for a long period of time. Moreover, these substances are often used in combination with other licit or illicit drugs and this renders almost unpredictable all the possible adverse effects including cancer. **Anyway, athletes should be made aware that long-term treatment with doping agents might increase the risk of developing cancer.** PMID: 17349798 [PubMed - as supplied by publisher]

**Cell Signal. 2007 Feb 8; [Epub ahead of print]**

**Insulin-like growth factor-I induces cyclooxygenase-2 expression via PI3K, MAPK and PKC signaling pathways in human ovarian cancer cells.-Cao Z, Liu LZ, Dixon DA, Zheng JZ, Chandran B, Jiang BH.**

Mary Babb Randolph Cancer Center, Department of Microbiology, Immunology and Cell Biology, West Virginia University, Morgantown, WV 26506-9300, United States.

**Elevated levels of insulin-like growth factor-I (IGF-I) are associated with ovarian carcinogenesis and progression.** However, the molecular mechanisms by which IGF-I contributes to ovarian cancer development remain to be elucidated. Cyclooxygenase-2 (COX-2) is a crucial player in the pathogenesis of human malignancies. Herein we showed that IGF-I efficiently induced COX-2 expression and PGE(2) biosynthesis at physiologically relevant concentrations in human ovarian cancer cells. IGF-I treatment significantly increased COX-2 transcriptional activation. IGF-I also stabilized COX-2 mRNA through the COX-2 3'-untranslated region (3'-UTR), which appeared independent of the conserved AU-rich elements. We next investigated the signaling pathways involved in IGF-I-induced COX-2 expression. We found that PI3K inhibitor wortmannin or LY294002 blocked COX-2 expression induced by IGF-I. Wortmannin treatment or a dominant negative PI3K mutant significantly inhibited IGF-I-induced COX-2 mRNA stabilization, but only slightly decreased COX-2 transcriptional activation. We showed that ERK1/2 and p38 MAPKs were required for IGF-I-induced COX-2 expression and that activation of both pathways by IGF-I increased COX-2 transcriptional activation and its mRNA stability. IGF-I stimulated PKC activation in the cells and pretreatment with PKC inhibitor bisindolylmaleimide prevented IGF-I-induced COX-2 transcriptional activation and mRNA stabilization, and inhibited COX-2 mRNA and protein expression. Taken together, our data demonstrate that IGF-I induces COX-2 expression in human ovarian cancer cells, which is mediated by three parallel signaling cascades - PI3K, MAPK, and PKC pathways that differentially regulate COX-2 expression at transcriptional and post-transcriptional levels. PMID: 17341442 [PubMed - as supplied by publisher]

**Cancer Res. 2007 Feb 15;67(4):1520-6.**

**Insulin-like growth factor-1 (IGF-1) induces WISP-2/CCN5 via multiple molecular cross-talks and is essential for mitogenic switch by IGF-1 axis in estrogen receptor-positive breast tumor cells.**

Dhar K, Banerjee S, Dhar G, Sengupta K, Banerjee SK.

Cancer Research Unit, VA Medical Center, Kansas City, MO 64128, USA.

Previously, we have shown that the expression of Wnt-1-induced signaling protein-2 (WISP-2), also known as CCN5, can be regulated by multiple stimulants in estrogen receptor (ER)-positive breast tumor cells to exert their mitogenic action in these cells. Here, we show that insulin-like growth factor-1 (IGF-1), a strong mitogen, enhanced the expression of the WISP-2/CCN5 gene parallel with the induction of proliferation of ER-positive breast tumor cells. An additive effect was also seen in combination with estrogen. Perturbation of IGF-1-induced WISP-2/CCN5 expression by WISP-2-specific RNA interference impaired the mitogenic action of IGF-1 on ER-positive breast tumor cells. Furthermore, the studies have shown that the multiple molecular cross-talks and side-talks among IGF-1R, ER-alpha, and phosphatidylinositol 3-kinase (PI3K)/Akt signaling molecules are required to induce WISP-2/CCN5 mRNA by IGF-1 in ER-positive, noninvasive breast tumor cells. Because a pure anti-ER ICI 182,780 is not only able to suppress the up-regulation of WISP-2/CCN5 mRNA expression by IGF-1, it also suppresses the PI3K/Akt activity induced by IGF-1 in MCF-7 cells; we anticipate that the membrane ER receptor may participate in this event. Collectively, these studies propose for the first time that WISP-2/CCN5 is an integral signaling molecule in mitogenic action of IGF-1 axis in ER-positive human breast tumor cells. PMID: 17308090 [PubMed - indexed for MEDLINE]

**Cancer Epidemiol Biomarkers Prev. 2006 Mar;15(3):449-55.**

**The insulin-like growth factor system and mammographic features in premenopausal and postmenopausal women.** dos Santos Silva I, Johnson N, De Stavola B, Torres-Mejia G, Fletcher O, Allen DS, Allen NE, Key TJ, Fentiman IS, Holly JM, Peto J.

Department of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, United Kingdom. [isabel.silva@lshtm.ac.uk](mailto:isabel.silva@lshtm.ac.uk)

**High levels of circulating insulin-like growth factor-I (IGF-I) and its major binding protein (IGFBP-3) at pre-menopausal ages have been associated with an increased breast cancer risk.** We conducted a cross-sectional study (215 premenopausal women and 241 after natural menopause) nested within the Guernsey prospective studies to examine the relationship between the IGF system and mammographic features of the breast. The mammographically dense area in the breast increased with increasing serum levels of IGF-I (P for linear trend,  $P(t) = 0.05$ ), IGF-II ( $P(t) = 0.08$ ), and IGFBP-3 ( $P(t) = 0.01$ ) only in premenopausal women. IGF-II and IGFBP-3 serum levels were associated with increases in the mammographically lucent area in both premenopausal ( $P(t) = 0.01$  and  $0.04$ , respectively) and postmenopausal women ( $P(t) < 0.001$  for both), but these associations were no longer statistically significant after adjustment for body mass index and waist circumference. Neither the IGF-I/IGFBP-3 nor the IGF-II/IGFBP-3 molar ratio was associated with any of these mammographic features. The number of A alleles at a polymorphic locus in the promoter region of the IGFBP-3 gene was associated with increasing mean IGFBP-3 levels in both premenopausal ( $P(t) = 0.01$ ) and postmenopausal ( $P(t) < 0.001$ ) women but not with mammographically dense area. These results support the hypothesis that the IGF system may affect the amount of mammographically dense tissue in premenopausal women, possibly by promoting cell proliferation and inhibiting apoptosis in the fibroglandular tissue. The findings also show strong relations between IGF-II and IGFBP-3 levels and the amount of mammographically lucent tissue, reflecting the associations between body adiposity and amount of fat tissue in the breast and between body adiposity and circulating levels of these growth factors. PMID: 16537700 [PubMed - indexed for MEDLINE]

**Int J Oncol. 2006 Mar;28(3):723-30.**

**Insulin-like growth factor-I promotes migration in human androgen-independent prostate cancer cells via the alphavbeta3 integrin and PI3-K/Akt signaling.**-Marelli MM, Moretti RM, Procacci P, Motta M, Limonta P.

**Center for Endocrinological Oncology, Institute of Endocrinology, University of Milano, I-20133 Milano, Italy.**

In its phase of androgen-independence, prostate carcinoma is characterized by a high proliferation rate and by a strong ability to give rise to metastases. **IGF-I has been shown to exert a potent mitogenic action on prostate cancer.** We investigated whether IGF-I might also affect the motility of prostate cancer cells and defined the mechanism of action. We found that IGF-I promotes the migratory capacity of androgen-independent prostate cancer cells through the activation of its specific receptor, IGF-IR. This effect was accompanied by a change in cell morphology (as revealed by scanning electron microscopy), and by a rearrangement of the actin cytoskeleton. The treatment of cells with the PI3-K inhibitor, LY294002, counteracted the pro-migratory activity of IGF-I. Experiments were then performed to clarify whether the integrin, alphavbeta3, could be involved in the action of IGF-I. We demonstrated that: a) the IGF-I-induced migration of cells is completely antagonized by an antibody specifically blocking the function of alphavbeta3; b) IGF-I increases alphavbeta3 immunofluorescence at the level of cell membranes, and this effect is counteracted by LY294002; and c) IGF-I increases alphavbeta3 protein levels. Our results demonstrate that IGF-I promotes the motility of androgen-independent prostate cancer cells by modulating alphavbeta3 integrin activation/expression; these effects are mediated by the PI3-K/Akt signaling pathway. **This study: a) supports a crucial role for IGF-I in the progression of the pathology towards the highly metastatic phase; and b) provides an additional rationale basis for the development of therapeutic strategies directed at the IGF-I/IGF-IR system in the treatment of androgen-independent prostate cancer.** PMID: 16465378 [PubMed - indexed for MEDLINE]

**Med Hypotheses. 2005;65(6):1028-37. Epub 2005 Aug 24.**

**The possible role of female sex hormones in milk from pregnant cows in the development of breast, ovarian and corpus uteri cancers.-Ganmaa D, Sato A.**

Department of Environmental Health, Medical University of Yamanashi, Tamaho, Yamanashi 409-3898, Japan. The continued increase in incidence of some hormone-related cancers worldwide is of great concern. Although estrogen-like substances in the environment were blamed for this increase, the possible role of endogenous estrogens from food has not been widely discussed. We are particularly concerned about cows' milk, which contains a considerable quantity of estrogens. When we name cows' milk as one of the important routes of human exposure to estrogens, the general response of Western people is that "man has been drinking cows' milk for around 2000 years without apparent harm." However, the milk that we are now consuming is quite different from that consumed 100 years ago. Unlike their pasture-fed counterparts of 100 years ago, modern dairy cows are usually pregnant and continue to lactate during the latter half of pregnancy, when the concentration of estrogens in blood, and hence in milk, increases. The correlation of incidence and mortality rates with environmental variables in worldwide countries provides useful clues to the etiology of cancer. In this study, we correlated incidence rates for breast, ovarian, and corpus uteri cancers (1993-97 from Cancer Incidence in Five Continents) with food intake (1961-97 from FAOSTAT) in 40 countries. Meat was most closely correlated with the breast cancer incidence ( $r=0.827$ ), followed by milk (0.817) and cheese (0.751). Stepwise multiple-regression analysis (SMRA) identified meat as the factor contributing most greatly to the incidence of breast cancer ( $[R]=0.862$ ). Milk was most closely correlated with the incidence of ovarian cancer ( $r=0.779$ ), followed by animal fats (0.717) and cheese (0.697). SMRA revealed that milk plus cheese make the greatest contribution to the incidence of ovarian cancer ( $[R]=0.767$ ). Milk was most closely correlated with corpus uteri cancer ( $r=0.814$ ), followed by cheese (0.787). SMRA revealed that milk plus cheese make the most significant contribution to the incidence of corpus uteri cancer ( $[R]=0.861$ ). In conclusion, increased consumption of animal-derived food may have adverse effects on the development of hormone-dependent cancers. **Among dietary risk factors, we are most concerned with milk and dairy products, because the milk we drink today is produced from pregnant cows, in which estrogen and progesterone levels are markedly elevated.** PMID: 16125328 [PubMed - indexed for MEDLINE]

**Med Hypotheses. 2001 Oct;57(4):510-4.**

**Is milk responsible for male reproductive disorders?-Ganmaa D, Wang PY, Qin LQ, Hoshi K, Sato A.**

**Department of Environmental Health, Medical University of Yamanashi, Tamaho, Yamanashi 409-3898, Japan.**

The role of environmental compounds with estrogenic activity in the development of male reproductive disorders has been a source of great concern. Among the routes of human exposure to estrogens, we are particularly concerned about cows' milk, which contains considerable amounts of estrogens. The major sources of animal-derived estrogens in the human diet are milk and dairy products, which account for 60-70% of the estrogens consumed. Humans consume milk obtained from heifers in the latter half of pregnancy, when the estrogen levels in cows are markedly elevated. The milk that we now consume may be quite unlike that consumed 100 years ago. Modern genetically-improved dairy cows, such as the Holstein, are usually fed a combination of grass and concentrates (grain/protein mixes and various by-products), allowing them to lactate during the latter half of pregnancy, even at 220 days of gestation. **We hypothesize that milk is responsible, at least in part, for some male reproductive disorders.** Copyright 2001 Harcourt Publishers Ltd. PMID: 11601881 [PubMed - indexed for MEDLINE]

**Med Hypotheses. 1997 Jun;48(6):453-61.-Dairy products and breast cancer: the IGF-I, estrogen, and bGH hypothesis.**

**Outwater JL, Nicholson A, Barnard N.-A. B. Princeton University 1996, Physicians Committee For Responsible Medicine, Washington, DC 20016, USA.**

Research on the role of dietary factors in breast cancer causation has focused predominantly on fat intake. **While some studies have examined associations between breast cancer rates and consumption of whole milk, there has been less attention given to dairy products in general. Dairy products contain both hormones and growth factors, in addition to fat and various chemical contaminants that have been implicated in the proliferation of human breast cancer cells.** This literature review evaluates the

epidemiological and mechanistic evidence linking dairy consumption with breast cancer risk. Publication Types: • Review-PMID: 9247884 [PubMed - indexed for MEDLINE]

**"Human Insulin-like growth factor (IGF-I) and bovine IGF-I are identical. Both contain 70 amino acids in the identical sequence."**-Judith C. Juskevich and C. Greg Guyer. SCIENCE, vol. 249. August 24, 1990.

If you believe that breastfeeding "works" to protect lactoferrins and immunoglobulins from digestion (and benefit the nursing infant), you must also recognize that milk is a hormonal delivery system. By drinking cow's milk, one delivers IGF-I in a bioactive form to the body's cells. When IGF-I from cow's milk alights upon an existing cancer...

**Nat Med. 2005 Feb; 11(2):127-9. Epub 2005 Jan 30.**

**The breast cancer resistance protein BCRP (ABCG2) concentrates drugs and carcinogenic xenotoxins into milk.**

**Jonker JW, Merino G, Musters S, van Herwaarden AE, Bolscher E, Wagenaar E, Mesman E, Dale TC, Schinkel AH.-The Netherlands Cancer Institute, Division of Experimental Therapy, Amsterdam, The Netherlands.**

**Contamination of milk with drugs, pesticides and other xenotoxins can pose a major health risk to breast-fed infants and dairy consumers.** Here we show that the multidrug transporter BCRP (encoded by ABCG2) is strongly induced in the mammary gland of mice, cows, and humans during lactation and that it is responsible for the active secretion of clinically and toxicologically important substrates such as the dietary carcinogen PhIP, the anticancer drug topotecan and the antiulcerative cimetidine into mouse milk. PMID: 15685169 [PubMed - in process]

**Br J Cancer. 2005 Mar 8; A prospective study of serum insulin-like growth factor-I (IGF-I), IGF-II, IGF-binding protein-3 and breast cancer risk.**

**Allen NE, Roddam AW, Allen DS, Fentiman IS, Dos Santos Silva I, Peto J, Holly JM, Key TJ.-1Cancer Research UK Epidemiology Unit, University of Oxford, Radcliffe Infirmary, Oxford OX2 6HE, UK.**

The associations between serum concentrations of insulin-like growth factor-I (IGF-I), IGF-II and IGF-binding proteins (IGFBP)-3 and risk of breast cancer were investigated in a nested case-control study involving 117 cases (70 premenopausal and 47 postmenopausal at blood collection) and 350 matched controls within a cohort of women from the island of Guernsey, UK. Women using exogenous hormones at the time of blood collection were excluded. Premenopausal women in the top vs bottom third of serum IGF-I concentration had a nonsignificantly increased risk for breast cancer after adjustment for IGFBP-3 (odds ratio (OR) 1.71; 95% confidence interval (CI): 0.74-3.95; test for linear trend, P=0.21). Serum IGFBP-3 was associated with a reduction in risk in premenopausal women after adjustment for IGF-I (top third vs the bottom third: OR 0.49; 95% CI: 0.21-1.12, P for trend=0.07). Neither IGF-I nor IGFBP-3 was associated with risk in postmenopausal women and serum IGF-II concentration was not associated with risk in pre- or postmenopausal women. **These data are compatible with the hypothesis that premenopausal women with a relatively high circulating concentration of IGF-I and low IGFBP-3 are at an increased risk of developing breast cancer.** British Journal of Cancer advance online publication, 8 March 2005; doi:10.1038/sj.bjc.6602471 [www.bjancer.com](http://www.bjancer.com). PMID: 15756268 [PubMed - as supplied by publisher]

**Med Hypotheses. 2004;62(1):133-42.-Estrogen: one of the risk factors in milk for prostate cancer.-Qin LQ, Wang PY, Kaneko T, Hoshi K, Sato A.-Department of Environmental Health, School of Medicine, University of Yamanashi, Shimokato 1110, Tamaho, Yamanashi 409-3898, Japan. [shinr@res.yamanashi-med.ac.jp](mailto:shinr@res.yamanashi-med.ac.jp)**

Studies to elucidate the cause of prostate cancer have met with little success to date. Epidemiological studies suggested that milk consumption is probably as one of the risk factors for prostate cancer. The studies thus focused on the fat and calcium in milk, but reached no definitive conclusion. **According to the measurements of estrogen levels in milk by different studies, it was suggested that estrogen in milk was a possible risk to cause prostate cancer.** One reason supporting this hypothesis is that Western diet (characterized by milk/dairy products

and meat) causes a trend of increasing levels of estrogens, and Western males show a higher incidence rate of prostate cancer than Asia males.

Estrogen levels in prostate fluid are also correlated very well with the prostate cancer. During several decades, estrogens, together with testosterone, was commonly used to induce the rodent model of prostate cancer. Our hypothesis also was supported by the presence of estrogen receptors in the prostate gland and the genotoxic role of estrogens on the prostate gland, as possible mechanisms. **Therefore, if modern milk consumption does expose consumers to high levels of estrogen and plays an adverse role in prostate cancer, action should be taken to produce the noncontaminant milk.**-PMID: 14729019 [PubMed - indexed for MEDLINE]

**J Natl Cancer Inst 2001 Sep 5;93(17):1330-6, Milk intake, circulating levels of insulin-like growth factor-I, and risk of colorectal cancer in men.**

**Ma J, Giovannucci E, Pollak M, Chan JM, Gaziano JM, Willett W, Stampfer MJ. Channing Laboratory, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA 02115, USA**<mailto:jing.ma@channing.harvard.edu>

**“BACKGROUND: Milk and dietary calcium may have antiproliferative effects against colorectal cancer, but milk intake also raises serum levels of insulin-like growth factor-I (IGF-I). A high ratio of IGF-I to IGF-binding protein-3 (IGFBP-3) has been linked to an increased risk of colorectal cancer. ... CONCLUSION: Intake of dairy products was associated with a modest increase in circulating IGF-I levels,** but intake of low-fat milk was associated with lower risk of colorectal cancer, particularly among individuals with high IGF-I/IGFBP-3. This subpopulation, which is at increased risk of colorectal cancer, might benefit the most from specific dietary intervention.” PMID: 11535708 [PubMed - indexed for MEDLINE]

**Am J Clin Nutr 2001 Oct;74(4):549-54- Dairy products, calcium, and prostate cancer risk in the Physicians' Health Study.** Chan JM, Stampfer MJ, Ma J, Gann PH, Gaziano JM, Giovannucci EL. Department of Nutrition, Harvard School of Public Health, Boston, USA <mailto:june.chan@channing.harvard.edu>

**BACKGROUND: A high calcium intake, mainly from dairy products, may increase prostate cancer risk by lowering concentrations of 1,25-dihydroxyvitamin D(3) [1,25(OH)(2)D(3)], a hormone thought to protect against prostate cancer. The results of epidemiologic studies of this hypothesis are inconclusive. OBJECTIVE: We investigated the association between dairy product and calcium intakes and prostate cancer risk in the Physicians' Health Study, a cohort of male US physicians... CONCLUSIONS: These results support the hypothesis that dairy products and calcium are associated with a greater risk of prostate cancer.**-PMID: 11566656 [PubMed - indexed for MEDLINE]

**Med Hypotheses 1997 Jun;48(6):453-61-Dairy products and breast cancer: the IGF-I, estrogen, and bGH hypothesis.**-Outwater JL, Nicholson A, Barnard N. A. B. Princeton University 1996, Physicians Committee For Responsible Medicine, Washington, DC 20016, USA.

“Research on the role of dietary factors in breast cancer causation has focused predominantly on fat intake. While some studies have examined associations between breast cancer rates and consumption of whole milk, there has been less attention given to dairy products in general. **Dairy products contain both hormones and growth factors, in addition to fat and various chemical contaminants that have been implicated in the proliferation of human breast cancer cells. This literature review evaluates the epidemiological and mechanistic evidence linking dairy consumption with breast cancer risk.**” Publication Types: Review, Review, Academic, PMID: 9247884 [PubMed - indexed for MEDLINE]

**Int J Health Serv 1996;26(1):173-85-Unlabeled milk from cows treated with biosynthetic growth hormones: a case of regulatory abdication.** Epstein SS. School of Public Health West, University of Illinois, Chicago 60612, USA.

“Levels of insulin-like growth factor-1 (IGF-1) are substantially elevated and more bioactive in the milk of cows hyperstimulated with the biosynthetic bovine growth hormones rBGH, and are further increased by pasteurization. IGF-1 is absorbed from the gastrointestinal tract, as evidenced by marked growth-promoting effects even in short-

term tests in mature rats, and absorption is likely to be still higher in infants. **Converging lines of evidence incriminate IGF-1 in rBGH milk as a potential risk factor for both breast and gastrointestinal cancers.**” Publication Types: Review, Review, Tutorial PMID: 8932606 [PubMed - indexed for MEDLINE]

**Adv Exp Med Biol 1999;472:29-42 Nutritional factors in human cancers. Giovannucci E. Channing Laboratory, Department of Medicine, Brigham and Women's Hospital, Boston, Massachusetts 02115, USA.**

“A variety of external factors interacting with genetic susceptibility influence the carcinogenesis process. External factors including oxidative compounds, electrophilic agents, and chronic infections may enhance genetic damage. **In addition, various hormonal factors, which influence growth and differentiation, are critically important in the carcinogenic process.** Diet and nutrition can influence these processes directly in the gastrointestinal tract by providing bioactive compounds to specific tissues via the circulatory system, or by modulating hormone levels. **Differences in certain dietary patterns among populations explain a substantial proportion of cancers of the colon, prostate and breast. These malignancies are largely influenced by a combination of factors related to diet and nutrition.** Their causes are multifactorial and complex, but a major influence is the widespread availability of energy-dense, highly processed and refined foods that are also deplete in fiber. **These dietary patterns in combination with physical inactivity contribute to obesity and metabolic consequences such as increased levels of IGF-1, insulin, estrogen, and possibly testosterone. These hormones tend to promote cellular growth. For prostate cancer, epidemiologic studies consistently show a positive association with high consumption of milk, dairy products, and meats.** These dietary factors tend to decrease 1.25(OH)<sub>2</sub> vitamin D, a cell differentiator, and low levels of this hormone may enhance prostate carcinogenesis. **While the nutritional modulation of growth-enhancing and differentiating hormones is likely to contribute to the high prevalence of breast, colorectal, prostate, and several other cancers in the Western world, these cancers are relatively rare in less economically developed countries, where malignancies of the upper gastrointestinal tract are quite common. The major causes of upper gastrointestinal tract cancers are likely related to various food practices or preservation methods other than refrigeration, which increase exposure to irritants or arcinogens.**” Publication Types: Review, Review, Academic PMID: 10736613 [PubMed - indexed for MEDLINE]

**Oncogene 2001 Nov 8;20(51):7542-50-Insulin-like growth factor I stimulates motility in human neuroblastoma cells.**

Meyer GE, Shelden E, Kim B, Feldman EL. Neuroscience Program, University of Michigan, 4414 Kresge III, 200 Zina Pitcher Place, Ann Arbor, MI 48109, USA.

**“Motility is an important process that contributes to cancer cell spread. Growth factors are key regulators of motility in many cell types. Insulin-like growth factor I (IGF-I) causes SH-SY5Y human neuroblastoma cells to undergo dynamic morphological changes... These results delineate some of the proximal events in the signaling mechanism utilized by IGF-I to stimulate cell motility.”** - PMID: 11709726 [PubMed - indexed for MEDLINE]

**Wien Med Wochenschr 2001;151(18-20):426-9-[Growth hormone in the elderly man] [Article in German]-Riedl M, Kotzmann H, Luger A.-Klinische Abteilung für Endokrinologie und Stoffwechsel, Universitätsklinik für Innere Medizin III, Wahringer Gürtel-18-20, A-1090 Wien.**

“Many symptoms being part of the growth hormone deficiency syndrome in adults like decrease in muscle mass and bone mineral content, increase in fat mass, and skin atrophy are observed also with ageing. Indeed, short-term trials with growth hormone administration to persons over 60 years old revealed that many of these symptoms could be reversed by growth hormone. **However, recent reports of an association of high insulin-like growth factor-1 (IGF-1)-concentrations and increased risk of prostate, lung, colon and breast cancer as well as a possible decrease of insulin sensitivity prohibit currently the use of growth hormone in an attempt to reverse a normal ageing process...**” PMID: 11817251 [PubMed - indexed for MEDLINE]

**Cell Growth Differ 2002 Feb;13(2):87-93-Insulin-like growth factor-I-induced migration of melanoma cells is mediated by interleukin-8 induction. Satyamoorthy K, Li G, Vaidya B, Kalabis J, Herlyn M. Wistar Institute, Philadelphia, Pennsylvania 19104, USA.**

**Urology 2002 Apr;59(4 Suppl 1):4-8-Mind-body effect: insulinlike growth factor-1; clinical depression; and breast, prostate, and other cancer risk-an unmeasured and masked mediator of potential significance?**

**Moyad MA, Pienta KJ.-Department of Urology, University of Michigan Medical Center, Ann Arbor, Michigan 48109-0330, USA. -<mailto:moyad@umich.edu>**

**“A possible relation may exist between higher insulinlike growth factor (IGF)-1 levels and the risk of premenopausal breast, prostate, or other cancers from recent prospective and case-control studies. Separately, a large prospective study has shown a potential association between chronic depression and cancer risk, whereas other preliminary studies have suggested a link between increasing IGF levels with major depression. ... Depression has not been included in this list of potential factors that may need to be considered when analyzing IGF-1 data and cancer risks. The time seems ripe to at least define further the relation, if any, between IGF-1 and depression.” - Publication Types: Review -Review, Tutorial-PMID: 11937431 [PubMed - indexed for MEDLINE]**

By this time you are probably saying to yourself, “Enough already about milk and IGF-1”. **The reason that I am over-emphasizing these clinical studies is to show you that there is science that basically says that cows’ milk should be left for cows only. NOT HUMANS.**

**One more thing about milk; Milk also contains somatic cells, (white blood cells) also known as pus cells. If you ever had a wound that had a yellowish white material oozing from it, that material contains somatic (pus) cells. Somatic cells are present in cows’ milk because of the infections that cows get. The legal limit in the United States is 750,000 somatic cells per ml, which is approximately 3,000,000 somatic cells per 8 oz. glass of milk. Since it takes 10 ounces of milk to equal 1 ounce of cheese, than YOU COULD BE EATING APPROXIMATELY 3.75 MILLION SOMATIC (PUS) CELLS WITH EVERY OUNCE OF CHEESE THAT YOU EAT. SOUNDS APPETIZING, DOESN’T IT?**

### Aspartame and Cancer

I received this e-mail about Aspartame and Cancer on 6/18/07 and I felt it should be included in this report.

**New Study - LOW DOSES Of Aspartame Cause CANCER-From Dr. Betty Martini, D.Hum. 6-15-7**

Statement from Dr. Russell Blaylock, MD

Dear Betty,

My review of the first Ramazzini Study concluded that the study was one of the best designed, comprehensive, and conclusive studies done to date on the multipotent carcinogenic potential of aspartame.

This second study is even more conclusive, in that **it shows a dose-dependent statistically significant increase in lymphomas/ leukemia in both male and female rats exposed to aspartame. These two cancers are the fastest growing cancers in people under age 30.**

**Also, of major concern is their finding of statistically significant increases in breast cancer in animals exposed to aspartame.** With newer studies clearly indicating that toxic exposures during fetal development can dramatically increase the cancer risk of the offspring, this study takes on a very important meaning to all pregnant women consuming aspartame products. Likewise, small children are at considerable risk of the later development of these highly fatal cancers.

It should be appreciated that the doses used in these study fall within the range of doses seen in everyday users of aspartame. This study, along with the first study, should convince any reasonable scientific mind, as well as the public at large, that this product should be removed from the market. -Russell L. Blaylock, M.D.

## **New Study - Low Doses Of Aspartame Cause Cancer**

Environmental Health Perspectives, the Journal of the U.S. National Institute of Environmental Health Sciences ranks first among more than 200 environmental science and occupational health journals and is read in 190 countries.

At New York's Mt Sinai School of Medicine DR. MORANDO SOFFRITTI was honored in April with the Irving J Selikoff Award for Outstanding contributions to the identification of environmental and industrial carcinogens, and his promotion of independent scientific research.

The prestigious Selikoff Award is only granted for groundbreaking cancer research. It was created 1993 by the Collegium Ramazzini, an academy of 180 internationally renowned experts in occupational and environmental health from over 30 nations. It has been awarded just twice before being presented to Dr. Soffritti.

His research was conducted for 36 months using 1,800 rats. It forced the conclusion that aspartame is a multipotential carcinogen. **Cancers aspartame produced included leukemia, lymphoma, kidney, and cranial peripheral nerves among others. Only the rats fed aspartame got malignant brain tumors.** This prodigious work was peer reviewed by 7 world experts.

**This work confirmed studies presented to the FDA 25 years ago that documented a catalogue of brain, uterine, ovarian, testicular, mammary, pancreatic and thyroid tumors. Based on the evidence FDA denied approval of aspartame for 16 years from the time it was discovered.** Then Don Rumsfeld, who was the CEO of NutraSweet's parent, the G. D. Searle Co., went to Washington to be newly elected Ronald Reagan's Secretary of Defense. The existing FDA Commissioner was asked to resign and aspartame was approved by Arthur Hull Hayes appointed by President Reagan. He did this over the objections of the FDA's scientific Board of Inquiry who had revoked the petition.

President Reagan had written an executive order making FDA powerless to do anything about aspartame until Hayes could get to FDA. Now the floundering Searle became profitable. The compromised FDA had full knowledge of aspartame's toxicity and the approval of this deadly carcinogen sentenced millions to disability and death.

An Atlanta Journal Constitution article dated 9/25/85 was titled "Reagan Says He Quit Using Sweeteners". It was in 1985 there were two congressional hearings over the outrage of the public being poisoned. In this article it states: "President Reagan says he quit using artificial sweeteners because "we don't know what is in them,"... Unfortunately it was too late for the public as the U.S. Circuit Court of Appeals for the District of Columbia ruled in favor of NutraSweet, even though it was known that the FDA had asked for the indictment for Searle, and revoked the petition for approval.

Soffritti's new study "Lifespan Exposure to Low Doses of Aspartame Beginning During Prenatal Life Increases Cancer Effects in Rats" focused on damage from low-dosage aspartame consumption over the long term and clearly demonstrated a great danger to unborn babies and children. **Newly identified is risk of breast cancer as the aspartame-using child matures.**

Exposures were at low doses. A 20 kg (45 pounds) child drinking 2 cans of diet soda a day brings into his body 400 mg. of aspartame.

Food & Drink Weekly reports that soda is the most commonly consumed beverage among children and soft drink consumption is up 500% over the last 50 years. American consumption has skyrocketed to over 600 12-ounce servings per person per year, and climbing. Cokes goal is to jump sales 25% annually.

The aim of Soffritti's new study was to identify the cancer risk aspartame presents, starting with the mother's ingestion before the fetus is born. The study was conducted on groups of 70-95 male and female Sprague Dawley rats, administered aspartame with feed at concentrations of 2000, 400, or 0 ppm from the 12th day of fetal life until natural death.

**The results of this carcinogenicity bioassay confirm and reinforce the earlier studys demonstration of aspartame's multipotential carcinogenicity.** Further, the study demonstrates that when lifespan exposure to aspartame begins during fetal life, its carcinogenic effects magnify.

Dr. Philip Landrigan, Chairman of Community and Environmental Medicine at Mt. Sinai Medical Center, says Dr. Soffritti's study on rats strongly implies human risk. **He advises parents of young children to think very very carefully about giving drinks and other aspartame-contaminated foods to children.** He advocates federal action be taken to review regulation of aspartame and that the chemical be submitted for precise critical investigation.

The abstract and link to the full text to be published on EHP online, is on the homepage of the European Ramazzini Foundation: [www.ramazzini.it](http://www.ramazzini.it)

Il secondo studio Ramazzini sull'aspartame in stampa sul giornale scientifico Environmental Health Perspectives Un secondo studio sul dolcificante artificiale aspartame, della Fondazione Europea Ramazzini, dal titolo L'Esposizione ad Aspartame a Basse Dosi, dalla Vita Fetale e per Tutta la Vita, Aumenta gli Effetti Cancerogeni sui Ratti, è stato accettato per essere pubblicato su Environmental Health Perspectives (EHP). L'abstract e il pdf del testo completo di EHP online, è disponibile nella homepage della Fondazione Europea Ramazzini: [www.ramazzini.it](http://www.ramazzini.it)

Aspartame carcinogenicity has been known for decades. In 1985 Dr. Adrian Gross, FDA toxicologist warned Congress that aspartame violates the Delaney Amendment which prohibits from our foods any ingredient causing cancer in animals.

See two letters Dr. Gross addressed to Senator Howard Metzenbaum, and the memo that triggered a request for indictment of Searle for fraudulent submissions: <http://www.dorway.com/gross.txt> Both US Prosecutors hired on the defense team and the statute of limitations expired.

Atty. James Turner, author of the Chemical Feast and the Nader Report on Food Protection at FDA, explains: "Since 1974 FDA and the Searle Drug Company have known that aspartame causes brain tumors in animals. In 1980 the public has known the Public Board of Inquiry affirmed the Searle studies showed cancer in animals and ruled that it should not be used in the food supply. It is past time that the FDA invoked the Delaney Clause and remove NutraSweet from the market. In July of 2005 further studies (Ramazzini) underscored the cancer causing capability of NutraSweet/ aspartame in animals."

See Mr. Turner in Sweet Misery: A Poisoned World explain how Rumsfeld's aspartame got approved after FDA said no. <http://www.soundandfury.tv/pages/rumsfeld2.html>

Ralph G. Walton, M.D. of Safe Harbor Behavioral Health, Erie, PA, emphasizes:

"Dr. Soffritti's two outstanding studies on the multipotential carcinogenic effects of aspartame add significantly to the ever- **growing body of evidence on the hazards of this artificial sweetener.** The FDA's stubborn adherence to their original, and controversial, approval of aspartame is unconscionable. The public must be informed that the approvals, both in this country and Europe, are based on highly questionable industry-funded research, or, in the case of recently issued statements on aspartame's supposed safety, on a questionnaire which in no way represents legitimate research. Independent research, such as the recent Soffritti studies invariably demonstrates the extremely hazardous nature of this product." [.safeharborbh.org](http://www.safeharborbh.org)

When the Ramazzini 2005 study was released the government and aspartame manufacturers were responsible for a coverup. They found an old AARP survey sent to a million American seniors: 16 pages with 56 questions. It asked: How high did you go in school? Had a hysterectomy? Do you eat brownies? Oatmeal? Margarine? Question #25 asked "Over the last 12 months when you drank coffee or tea, what kind of sweetener did you regularly add?" There were 6 multi-choice selections, one of which was: Equal or aspartame

The 10-year-old 3-word item instantaneously converted the questionnaire into the biggest aspartame study in history! It showed no problems at all! (None were asked for!) Thru saturation news releases this propaganda spread planet wide in major magazines and other media. [www.wnho.net/halt\\_the\\_spin\\_on\\_bogus\\_studies.htm](http://www.wnho.net/halt_the_spin_on_bogus_studies.htm)

Dr. Soffritti's work was presented to the European Food Safety Authority (EFSA). The EFSA risk assessment has been criticized from the beginning because of conflicts of interest among the panel members, particularly the chair Susan Barlow, who is an industry consultant. They rejected Dr. Soffritti's study with the lame excuse that cancers were caused by lung infections. Eminent Researchers and scientists know that respiratory infection is a factor in the dying process and never took their excuse as noteworthy.

Ramazzinis control rats had a much lower incidence of cancers than the aspartame-fed rats. Critics of EFSA's risk assessment said that if the cancers were caused by inflammatory lung disease than the control group would have had as many cancers as the rats fed aspartame.

EFSA didn't apologize so they were reported to the Universal Court of Justice. Then EFSA's Dr. Koeter admitted that industry pressured them to hijack science. [www.wnho.net/letter\\_to\\_efsa.htm](http://www.wnho.net/letter_to_efsa.htm)

Dr. H. J. Roberts, M.D., FACP, FCCP, author of several texts on aspartame disease commented: "The elegant studies by Dr. Morando Soffritti and his colleagues, coupled with other recent related publications, reinforce my longstanding opinion that aspartame products represent carcinogens -- or co-carcinogens -- for several major tumors in humans, especially involving the brain.

"The details appear in my text, Aspartame Disease: An Ignored Epidemic, and in my article, Does Aspartame Cause Human Brain Cancer? The latter indicated that aspartame or its metabolites "might activate one or more oncogenes that potentate or initiate cell mitosis, either by direct or indirect effects

"The failure of the FDA to acknowledge and act on the ongoing revelations over the last two decades about the hazards of aspartame products in a number of realms, especially when taken by children and pregnant women, remains a source of professional embarrassment.

This chemical constitutes an imminent public health hazard. I congratulate Dr. Soffritti for independently underscoring this warning."

Neurosurgeon Dr. Russell Blaylock remarked on Dr. Soffritti's first study: "The study released in the European Journal of oncology by Morando Soffritti and co-workers should terrify mothers and all those consuming aspartame sweetened products. This was a carefully done study, which clearly demonstrated a statistically significant increase in several types of lymphomas and leukemias in rats. Both of these malignancies have increased significantly in this country since the widespread use of aspartame.

"The type of damage was a duplicate of that associated with cancers. **Along with this most recent study, this means that drinking a single diet cola sweetened with developing a lymphoma or leukemia.**

"They also found an increased incidence of malignant brain tumors, even though it was not statistically significant. This does not mean there is no association to brain tumors, since **only the animals exposed to aspartame developed the tumors. With children and pregnant women drinking the largest amount of diet colas, this puts their children at the greatest risk of developing one of these horrible diseases.** Their study found that even low doses of aspartame could cause these malignancies; yet, the higher the dose, the more cancers that were seen.

"Since aspartame can increase obesity and may even cause the metabolic syndrome that affects 48 million Americans, there is no reason to ever consume this product. At the least it should be immediately banned from all schools." Dr. Blaylock is author of Excitotoxins: The Taste That Kills about aspartame. In order to save the children this Report For Schools is repeatedly sent to schools and board of educations. [www.wnho.net/report\\_on\\_aspartame\\_and\\_children.htm](http://www.wnho.net/report_on_aspartame_and_children.htm)

Will FDA finally admit aspartame approval was illegal, violating Delaney and also adulteration statutes? Aspartame is sold as an additive, but it's a deadly excitoneurotoxic carcinogenic drug that interacts with all drugs and vaccines. Aspartame brain tumor cases from New York and New Jersey are being taken at this time.

Just when you think the FDA can't sink lower, they do. They issued a report the day before the release of the new study, denying its research, without any excuse. This was about the 2005 study but releasing this negative statement the day before the new one stands to confuse the public, as they intend. [http://www.wnho.net/open\\_letter\\_to\\_laura\\_tarantino\\_fda.htm](http://www.wnho.net/open_letter_to_laura_tarantino_fda.htm)

After a study sponsored by Food Standards in the UK showed additives cause behavioral problems in children, large food chains there began the removal of aspartame from their products. But not the FDA in the US who have known this for a quarter of a century. <http://www.youtube.com/watch?v=7W-gba0GPwU> From

Atavistik Pictures: [www.atavistik.com](http://www.atavistik.com) **Dr. Louis Elsas, pediatric professor, genetics, testified to Congress in 1985 that it's a teratogen and can trigger birth defects and mental retardation.** It's time for Congress to look into the matter that the FDA has allowed aspartame to remain on the market for a quarter of a century even though they know it causes cancer, and a host of neurodegenerative diseases. The stream of whoppers continues [www.wnho.net/whopper.htm](http://www.wnho.net/whopper.htm) just like the millions of deaths from aspartame.

Dr. Betty Martini, D.Hum, Founder  
Mission Possible International  
9270 River Club Parkway  
Duluth, Georgia 30097  
770 242-2599  
<http://www.wnho.net>  
<http://www.mpwhi.com/>

Aspartame Toxicity Center  
<http://www.holisticmed.com/aspartame>

To contact the Ramazzini Foundation:

Kathryn Knowles  
Director of Resource Development  
European Ramazzini Foundation  
Tel. +39 051 6640460 (int.3)  
skype: kathryknowles  
[development@ramazzini.it](mailto:development@ramazzini.it)  
<http://www.ramazzini.it/>

The American Cancer Society is heading in the right direction. They recommend that you eat more fruits and vegetables and to take antioxidant supplements to help in your quest to reduce your risk of cancer. My recommendation would be to eat more **RAW ORGANIC** fruits and vegetables, because organic produce is not grown with any pesticides, insecticides, or herbicides. We all know of the controversy of pesticides, insecticides, and herbicides. Organic produce is grown the way Mother Nature intended it to grow. It has not been genetically modified in a science lab. I guess organic farmers feel that they do not have to improve on Mother Nature.

Here is more evidence to prove that you should be eating organic foods. I read three different unrelated articles and put two and two together. Let's see if you develop the same opinion as I did.

Article number one: **Fruits, Vegetables Don't Prevent Breast Cancer**

Idea of nutrition stopping disease dealt another blow By Edward Edelson-HealthScout Reporter

**TUESDAY, Feb. 13, (HealthScout) --** A diet rich in fruits and vegetables has no significant effect on the risk of breast cancer, says a study looking at data on more than 350,000 women.

Gee, I thought eating fruits and vegetables were good for you? Keep reading you'll be surprised as to what you learn next.

Article number two: **Pesticides Breeding Ground for Bacteria-Germs thrive in certain farm chemicals, study shows** By Randy Dottinga-HealthScout Reporter -Thursday, Oct. 12, 2000 (HealthScout) -- **Pesticides kill insects, but new research suggests they may be a breeding ground for different types of bugs -- bacteria.**

**"Four out of 15 pesticides tested proved to be a very friendly environment for germs that cause human diseases,"** says Rick Holley, professor of food microbiology at the University of Manitoba in Canada.

**..."I'd like to be able to say you could successfully wash away any problem bacteria, but the fact is that isn't 100 percent certain,"** Holley says, **...If a link is established, the findings could help explain why the incidents of illness carried by plants have doubled or tripled in the last decade, Holley says.**

Gee, could it be that sickness and disease is rising because of the bacteria that may be coming from the fruits and vegetables that we eat? Keep reading and see if the next article will not scare the living non-organic produce out of you.

Article number three: **Highly pleomorphic staphylococci as a cause of cancer.**-Author: Wainwright M-  
Source: **Med Hypotheses; 54(1):91-4 2000 UI: 10790733**

“Abstract: **An extensive historical literature exists suggesting that bacteria and other non-virus microorganisms cause cancer...The literature linking highly pleomorphic bacteria with carcinogenesis is presented here in an attempt to add weight to the view that bacteria, notably those expressing the morphology of common species of staphylococci, cause cancer.”**

Mesh Terms: Human Neoplasms/\*microbiology Staphylococcus/classification/\*isolation & purification-Language: ENG - Publication Type: JOURNAL ARTICLE -Title Abbreviation: Med Hypotheses -Year: 2000-Address: Department of Molecular Biology and Biotechnology, University of Sheffield, UK. Mail to: <mailto:M.Wainwright@Sheffield.ac.uk> Entry Month: 200006

O.K. people. Did you come up with the same conclusion as I did, which is: **You may be eating the nice looking fruit and/or vegetable that has the pesticide residue that may be harboring the bacteria that maybe infecting thousands of people with CANCER. Do ya think?**

**DO YOUR BEST TO EAT ONLY ORGANIC FOODS!!!!** A good way to start is by going to [www.MyWholeFoodFarmacy.us](http://www.MyWholeFoodFarmacy.us) they have many organic snacks you can introduce into your diet. You can learn more about The Whole Food Farmacy at the end of his report in the Resources Section.

Another important aspect in the war with cancer is to learn more about complementary medicine. More and more doctors are recognizing the important role that complementary medicine has to offer.

If you would like to learn more about complementary medicine your local library and bookstores would have countless books on the subject. If you like, you could start with my book, ***"Learn the Simple Truth to Achieving Optimum Health"***. Don't take my word for it. Read what a highly respected breast cancer surgeon has to say:

"After reading Tom Ciraulo's book entitled, **"Learn the Simple Truth to Achieving Optimum Health"**, I felt I had acquired a lifetime of experience in a well presented, easy to understand manuscript. Tom is a renowned leader in the growing science of holistic medicine, and has enlightened his readers with enumerable everyday analogies, bringing the most salient points of achieving optimum health. This well researched, up to date book is a must for all. I highly recommend it for the experts and the novices interested in complementary medicine." --  
**Dwight De Risi, M.D. F.A.C.S., Surgical Oncologist, Specializing in Diseases of the Breast.**

Like Dr. De Risi said. **"This well researched, up to date book is a must for all. I highly recommend it for the experts and the novices interested in complementary medicine."** If you had, have or even feel that you maybe predisposed to a serious illness like cancer or any other debilitating/life threatening disease. Or you know others who fall into the above categories, you owe it to yourself and them to read **"Learn The Simple Truth To Achieving Optimum Health"** as well as learn as much as you can about complementary medicine.

Here is some scientific support as to why I take a Barley Grass Juice and Spirulina product. I take two teaspoons of the Barley Grass Juice and one teaspoon of the Spirulina per day mixed in with vanilla flavored rice milk or soymilk. Those who have or had cancer and or tumors tell me that by taking the above amounts two to four times per day, they achieved their desired results. Results varied by individual.

**Clinical study abstracts showing the potential benefits of Spirulina and Chlorella in their fight against cancer.**

**Biochem Pharmacol. 2004 Aug 1;68(3):453-62.-Molecular mechanisms in C-Phycocyanin induced apoptosis in human chronic myeloid leukemia cell line-K562.**

**Subhashini J, Mahipal SV, Reddy MC, Mallikarjuna Reddy M, Rachamalla A, Reddanna P.-Department of Animal Sciences, School of Life Sciences, University of Hyderabad, Hyderabad 500046, India.**

**C-Phycocyanin (C-PC), the major light harvesting biliprotein from *Spirulina platensis* is of greater importance because of its various biological and pharmacological properties. It is a water soluble, non-toxic fluorescent protein pigment with potent anti-oxidant, anti-inflammatory and anti-cancer properties.**

In the present study the effect of highly purified C-PC was tested on growth and multiplication of human chronic myeloid leukemia cell line (K562). The results indicate significant decrease (49%) in the proliferation of K562 cells treated with 50 microM C-PC up to 48 h. Further studies involving fluorescence and electron microscope revealed characteristic apoptotic features like cell shrinkage, membrane blebbing and nuclear condensation. Agarose electrophoresis of genomic DNA of cells treated with C-PC showed fragmentation pattern typical for apoptotic cells. Flow cytometric analysis of cells treated with 25 and 50 microM C-PC for 48 h showed 14.11 and 20.93% cells in sub-G0/G1 phase, respectively. C-PC treatment of K562 cells also resulted in release of cytochrome c into the cytosol and poly (ADP) ribose polymerase (PARP) cleavage. These studies also showed down regulation of anti-apoptotic Bcl-2 but without any changes in pro-apoptotic Bax and thereby tilting the Bcl-2/Bax ratio towards apoptosis. These effects of C-PC appear to be mediated through entry of C-PC into the cytosol by an unknown mechanism. The present study thus demonstrates that C-PC induces apoptosis in K562 cells by cytochrome c release from mitochondria into the cytosol, PARP cleavage and down regulation of Bcl-2.- PMID: 15242812 [PubMed - indexed for MEDLINE]

**Arch Latinoam Nutr. 2002 Sep;52(3):232-40.- [Update on the pharmacology of *Spirulina* (*Arthrospira*), an unconventional food]**

**Chamorro G, Salazar M, Araujo KG, dos Santos CP, Ceballos G, Castillo LF.-Escuela Nacional de Ciencias Biologicas, Instituto Politecnico Nacional, M.A.D. Mexico Universidade Federal Fluminense, Niteroi, Brasil.**

*Spirulina* (*Arthrospira*), a filamentous, unicellular alga, is a cyanobacterium grown in certain countries as food for human and animal consumption. It is also used to derive additives in pharmaceuticals and foods. **This alga is a rich source of proteins, vitamins, amino acids, minerals, and other nutrients. Its main use, therefore, is as a food supplement. Over the last few years, however, it has been found to have many additional pharmacological properties. Thus, it has been experimentally proven, in vivo and in vitro that it is effective to treat certain allergies, anemia, cancer, hepatotoxicity, viral and cardiovascular diseases, hyperglycemia, hyperlipidemia, immunodeficiency, and inflammatory processes, among others.** Several of these activities are attributed to *Spirulina* itself or to some of its components including fatty acids omega-3 or omega-6, beta-carotene, alpha-tocopherol, phycocyanin, phenol compounds, and a recently isolated complex, Ca-Spirulan (Ca-SP). This paper aims to update and critically review the results published over the last few years with regards to these properties. The conclusion is that even if this cyanobacterium has been one of the most extensively studied in the chemical, pharmacological and toxicological points of view, it is still necessary to expand the research in order to have more consistent data for its possible use in human beings. Publication Types: • Review, Tutorial PMID: 12448336 [PubMed - indexed for MEDLINE]

**Int Immunopharmacol 2002 Mar;2(4):423-34**

**Activation of the human innate immune system by *Spirulina*: augmentation of interferon production and NK cytotoxicity by oral administration of hot water extract of *Spirulina platensis*.-Hirahashi T, Matsumoto M, Hazeki K, Saeki Y, Ui M, Seya T.- Department of Immunology, Osaka Medical Center for Cancer and Cardiovascular Diseases, Japan.**

**“*Spirulina platensis* is a cyanobacterial species that is surmised to potentiate the immune system leading to suppression of cancer development and viral infection.** Here, we identified the molecular mechanism of the human immune potentiating capacity of *Spirulina* by analyzing blood cells of volunteers with pre and post oral administration of hot water extract of *Spirulina*. NK functions represented by IFN gamma production and cytotoxicity were enhanced after administration of *Spirulina* in >50% subjects. IFN gamma was produced in an IL-12/IL-18-dependent fashion. In vitro stimulation of blood cells with BCG cell wall skeleton (CWS) allowed more potent IL-12 p40 production in cells from volunteers given *Spirulina* than in cells without pre-exposure to *Spirulina*. As BCG-CWS serves as a ligand for Toll-like receptor (TLR) 2 and 4 to raise the maturation stage of monocytes/macrophages, *Spirulina* may be involved in the signaling responses through Toll in blood cells even when orally administered. These observations indicated that in humans *Spirulina* acts directly on

myeloid lineages and either directly or indirectly on NK cells. The presence of co-operative IL-12 and IL-18 is critically important for NK-mediated IFN gamma production.” -PMID: 11962722 [PubMed - in process]

**Acta Pharmacol Sin 2001 Dec;22(12):1121-4-Chemo-and radio-protective effects of polysaccharide of Spirulina platensis on hemopoietic system of mice and dogs.**

**Zhang HQ, Lin AP, Sun Y, Deng YM. The Medical and Pharmaceutical Academe of Yangzhou University, Yangzhou 225001, China.**

“AIM: To observe polysaccharide of Spirulina platensis (PSP) on the hematopoietic system of mouse and dogs which were damaged by injection of cyclophosphamide (CTX) and (60) Co-gamma irradiation. **METHODS:** CTX and (60) Co gamma ray were used to induce bone marrow damage, and the experimental animals were ig with different dose of PSP in vivo, after 12-d and 21-d administration, the whole blood cells and nucleated cells in bone marrow were measured, and the DNA in bone marrow were inspected by UV-spectrophotometer. **RESULTS:** CTX and (60) Co-gamma irradiation induced hemopoietic system damage in mice and dogs, respectively. PSP 30, 60 mg/kg increased the level of the white cells in blood and nucleated cells and DNA in bone marrow in mice but had no effects on red cells and hemoglobins. PSP 12 mg/kg increased the level of red cells, white cells, and hemoglobins in blood and nucleated cells in bone marrow in dogs (P<0.01), and the effects of PSP 60 mg/kg were better than that of berbamine hydrochloride 60 mg/kg. **CONCLUSION: PSP has chemo-protective and radio-protective capability, and may be a potential adjunct to cancer therapy.**”-PMID: 11749812 [PubMed - in process]

**Clin Exp Metastasis 1998 Aug;16(6):541-50-Inhibition of tumor invasion and metastasis by calcium spirulan (Ca-SP), a novel sulfated polysaccharide derived from a blue-green alga, Spirulina platensis.**

**Mishima T, Murata J, Toyoshima M, Fujii H, Nakajima M, Hayashi T, Kato T, Saiki I-Research Institute for Wakan-Yaku, Toyama Medical and Pharmaceutical University, Japan.**

“We have investigated the effect of calcium spirulan (Ca-SP) isolated from a blue-green alga, Spirulina platensis, which is a sulfated polysaccharide chelating calcium and mainly composed of rhamnose, on invasion of B16-BL6 melanoma, Colon 26 M3.1 carcinoma, and HT-1080 fibrosarcoma cells through reconstituted basement membrane (Matrigel). Ca-SP significantly inhibited the invasion of these tumor cells through Matrigel/fibronectin-coated filters. Ca-SP also inhibited the haptotactic migration of tumor cells to laminin, but it had no effect on that to fibronectin. Ca-SP prevented the adhesion of B16-BL6 cells to Matrigel and laminin substrates but did not affect the adhesion to fibronectin. The pretreatment of tumor cells with Ca-SP inhibited the adhesion to laminin, while the pretreatment of laminin substrates did not. Ca-SP had no effect on the production and activation of type IV collagenase in gelatin zymography.

In contrast, Ca-SP significantly inhibited degradation of heparan sulfate by purified heparanase. The experimental lung metastasis was significantly reduced by co-injection of B16-BL6 cells with Ca-SP. Seven intermittent i.v. injections of 100 microg of Ca-SP caused a marked decrease of lung tumor colonization of B16-BL6 cells in a spontaneous lung metastasis model. **These results suggest that Ca-SP, a novel sulfated polysaccharide, could reduce the lung metastasis of B16-BL6 melanoma cells, by inhibiting the tumor invasion of basement membrane probably through the prevention of the adhesion and migration of tumor cells to laminin substrate and of the heparanase activity.**”-PMID: 9872601 [PubMed - indexed for MEDLINE]

**Nutr Cancer 1995;24(2):197-202-Evaluation of chemoprevention of oral cancer with Spirulina fusiformis.-Mathew B, Sankaranarayanan R, Nair PP, Varghese C, Somanathan T, Amma BP, Amma NS, Nair MK.-Regional Cancer Centre, Medical College Campus, Kerala, India.**

“The blue-green microalgae Spirulina, used in daily diets of natives in Africa and America, have been found to be a rich natural source of proteins, carotenoids, and other micronutrients. **Experimental studies in animal models have demonstrated an inhibitory effect of Spirulina algae on oral carcinogenesis.** Studies among preschool children in India have demonstrated Spirulina fusiformis (SF) to be an effective source of dietary vitamin A. We evaluated the chemopreventive activity of SF (1 g/day for 12 mos) in **reversing oral leukoplakia in pan tobacco chewers in Kerala, India.** Complete regression of lesions was observed in 20 of

44 (45%) evaluable subjects supplemented with SF, as opposed to 3 of 43 (7%) in the placebo arm ( $p < 0.0001$ ). When stratified by type of leukoplakia, the response was more pronounced in homogeneous lesions: complete regression was seen in 16 of 28 (57%) subjects with homogeneous leukoplakia, 2 of 8 with erythroplakia, 2 of 4 with verrucous leukoplakia, and 0 of 4 with ulcerated and nodular lesions. Within one year of discontinuing supplements, 9 of 20 (45%) complete responders with SF developed recurrent lesions. Supplementation with SF did not result in increased serum concentration of retinol or beta-carotene, nor was it associated with toxicity. This is the first human study evaluating the chemopreventive potential of SF. More studies in different settings and different populations are needed for further evaluation.”-Publication Types: Clinical Trial -Randomized Controlled Trial -PMID: 8584455 [PubMed - indexed for MEDLINE]

**J Agric Food Chem. 2005 May 18;53(10):4207-12.**

**Antioxidant and antiproliferative activities of Spirulina and Chlorella water extracts.-Wu LC, Ho JA, Shieh MC, Lu IW.**

Department of Applied Chemistry, National Chi-Nan University, Puli, Nantou, Taiwan. [lw25@ncnu.edu.tw](mailto:lw25@ncnu.edu.tw)

Liver fibrosis is a chronic liver disease that will further develop to cirrhosis if severe damage continues to form. A potential treatment for liver fibrosis is to inhibit activated hepatic stellate cell (HSC) proliferation and, subsequently, to induce HSC apoptosis. It has been reported that antioxidants are able to inhibit the proliferation of HSCs. In this study, the aqueous extract of spirulina was chosen as the source of antioxidant to investigate the inhibitory effect on the proliferation of HSC. The growth inhibitory effects of aqueous spirulina and chlorella extract on human liver cancer cells, HepG2, were also studied and compared in pairs. **Results indicated that the total phenol content of spirulina was almost five times greater than that of chlorella (6.86 +/- 0.58 vs 1.44 +/- 0.04 mg tannic acid equivalent/g of algae powder, respectively).** The antioxidant activity of spirulina determined by the ABTS\*+ method was higher than chlorella (EC50: 72.44 +/- 0.24 micromol of trolox equivalent/g of spirulina extract vs 56.09 +/- 1.99 micromol of trolox equivalent/g of chlorella extract). Results of DPPH\* assay also showed a similar trend as the ABTS\*+ assay (EC50: 19.39 +/- 0.65 micromol of ascorbic acid equivalent/g of spirulina extract vs 14.04 +/- 1.06 micromol of ascorbic acid equivalent/g of chlorella extract). **The aqueous extracts of these two algae both showed antiproliferative effects on HSC and HepG2, but spirulina was a stronger inhibitor than chlorella. Annexin-V staining showed that aqueous extract of spirulina induced apoptosis of HSC after 12 h of treatment. In addition, the aqueous extract of spirulina triggered a cell cycle arrest of HSC at the G2/M phase.** PMID: 15884862 [PubMed - indexed for MEDLINE]

**J Med Food. 2004 Summer;7(2):146-52.**

**Effects of chlorella on activities of protein tyrosine phosphatases, matrix metalloproteinases, caspases, cytokine release, B and T cell proliferations, and phorbol ester receptor binding.-Cheng FC, Lin A, Feng JJ, Mizoguchi T, Takekoshi H, Kubota H, Kato Y, Naoki Y.**

MDS Pharma Services Taiwan Ltd., 158 Li-Teh Road, Taipei 112, Taiwan, Republic of China. [fong-chi.cheng@mdsps.com](mailto:fong-chi.cheng@mdsps.com)

**A Chlorella powder was screened using 52 in vitro assay systems for enzyme activity, receptor binding, cellular cytokine release, and B and T cell proliferation.** The screening revealed a very potent inhibition of human protein tyrosine phosphatase (PTP) activity of CD45 and PTP1C with 50% inhibitory concentration (IC(50)) values of 0.678 and 1.56 microg/mL, respectively. It also showed a moderate inhibition of other PTPs, including PTP1B (IC(50) = 65.3 microg/mL) and T-cell-PTP (114 microg/mL). Other inhibitory activities and their IC(50) values included inhibition of the human matrix metalloproteinases (MMPs) MMP-1 (127 microg/mL), MMP-3 (185 microg/mL), MMP-7 (18.1 microg/mL), and MMP-9 (237 microg/mL) and the human peptidase caspases caspase 1 (300 microg/mL), caspase 3 (203 microg/mL), caspase 6 (301 microg/mL), caspase 7 (291 microg/mL), and caspase 8 (261 microg/mL), as well as release of the cytokines interleukin (IL)-1 (44.9 microg/mL), IL-2 (14.8 microg/mL), IL-4 (49.2 microg/mL), IL-6 (34.7 microg/mL), interferon-gamma (31.6 microg/mL), and tumor necrosis factor-alpha (11 microg/mL) from human peripheral blood mononuclear cells. Chlorella also inhibited B cell proliferation (16.6 microg/mL) in mouse splenocytes and T cell proliferation (54.2 microg/mL) in mouse thymocytes. The binding of a phorbol ester, phorbol 12,13-dibutyrate, to its receptors was also inhibited by Chlorella with an IC(50) of 152 microg/mL. **These results reveal potential**

pharmacological activities that, if confirmed by in vivo studies, might be exploited for the prevention or treatment of several serious pathologies, including inflammatory disease and cancer. -PMID: 15298760 [PubMed - indexed for MEDLINE]

**Phytother Res.** 2002 Sep;16(6):581-5.

**Simple assay for antitumour immunoreactive glycoprotein derived from *Chlorella vulgaris* strain CK22 using ELISA.**-Noda K, Tanaka K, Yamada A, Ogata J, Tanaka H, Shoyama Y.

Department of Pharmacognosy, Graduate School of Pharmaceutical Sciences, Kyushu University, 3-1-1 Maidashi, Higashi-ku, Fukuoka 812-8582, Japan.

A quantitative ELISA system was developed using a monoclonal antibody (MAB) specific for an antitumour immunoreactive glycoprotein (CVS) derived from *C. vulgaris* strain CK22. The full measuring range of the assay extends from 0.63 to 10.0 ng/mL of CVS. Although no cross-reaction was observed to proteins tested or other biological response modifiers (BRMs) derived from different sources, cross-reactions were found with culture supernatants from two other strains of *C. vulgaris* having a strong antitumour immunoreactivity. Treatment of CVS with protease, acid, or alkali weakened or completely eliminated the reactivity against the MAB and also its antitumour immunoreactivities. This ELISA system is suitable for the biologically active form of CVS derived from *C. vulgaris* strain CK22 and related immunoreactive strains. Copyright 2002 John Wiley & Sons, Ltd.-PMID: 12237820 [PubMed - indexed for MEDLINE]

For those of you who are currently taking chemo you may want to also take a product that contains *Chlorella*. The *Chlorella* may help with the side effects as evidenced by the following study.

**Cancer Immunol Immunother.** 1996 Jun;42(5):268-74.

**Protective effect of an acidic glycoprotein obtained from culture of *Chlorella vulgaris* against myelosuppression by 5-fluorouracil.**-Konishi F, Mitsuyama M, Okuda M, Tanaka K, Hasegawa T, Nomoto K.

**Research Laboratories, *Chlorella* Industries Co. Ltd., Fukuoka, Japan.**

An acidic glycoprotein prepared from a culture of *Chlorella vulgaris* (CVS) was examined for its protective effect on 5-fluorouracil(5FU)-induced myelosuppression and indigenous infection in mice. Subcutaneous administration of CVS greatly reduced the mortality of non-tumor-bearing mice given a high dose of 5FU, and could increase the LD50 value of 5FU for these mice. After 5FU treatment, indigenous infection developed probably as a result of the impairment of the host defense system. CVS reduced the incidence of indigenous infections and this effect was attributable to the acceleration of recovery from 5FU-induced myelosuppression. Early recovery of hematopoietic stem cells, or cells responding to interleukin-3 or granulocyte/macrophage-colony-stimulating factor, was especially observed in the bone marrow of CVS-treated mice on days 4-9 after the injection of 5FU. **When tumor-bearing mice were given CVS during treatment with 5FU, CVS prolonged the survival of mice without affecting the antitumor activity of 5FU. In addition, CVS was itself shown to exert an antitumor effect. These results suggested that CVS may be beneficial for the alleviation of side-effects in cancer chemotherapy without affecting the antitumor activity of the chemotherapeutic agent.** PMID: 8706047 [PubMed - indexed for MEDLINE]

**Immunopharmacol Immunotoxicol.** 2001 Feb;23(1):119-32.

**Effects of the green algae *Chlorella vulgaris* on the response of the host hematopoietic system to intraperitoneal ehrlich ascites tumor transplantation in mice.** Justo GZ, Silva MR, Queiroz ML.

**Department of Pharmacology and Hemocentre, Faculdade de Ciências Médicas, Universidade Estadual de Campinas (UNICAMP), SP, Brazil.**

*Chlorella vulgaris* extract (CVE) was examined for its effects on the Ehrlich ascites tumor-induced suppression in the numbers of bone marrow and spleen granulocyte-macrophage progenitor cells (CFU-GM) in mice. No effects on bone marrow and spleen CFU-GM, as compared to controls, were observed in normal mice given 50, 100 and 200 mg/kg CVE orally for 5 days. In tumor-bearing mice, myelosuppression concomitant with increased number

of spleen CFU-GM were observed. The number of CFU-GM in the bone marrow was restored to control levels after the administration of CVE (50, 100 and 200 mg/kg) to tumor-bearing mice, and a slight reduction in spleen colony formation was observed in these animals. In addition, CVE significantly prolonged the survival of mice inoculated with the Ehrlich ascites tumor. **These results suggest a protective antitumor effect of CVE which might be attributable, at least in part, to the stimulation of the production and, possibly, maturation of granulocytes and macrophages.**-PMID: 11322644 [PubMed - indexed for MEDLINE]

After reading the next two clinical studies I feel you should go out and get yourself a bottle of the Mangosteen or any anti-parasite product that you may be aware of.

### Clinical study abstracts that show the potential link between parasites and cancer

**Mutagenesis 2001 Nov; 16(6):495-7 Increased translocation frequency of chromosomes 7, 11 and 14 in lymphocytes from patients with neurocysticercosis.** Herrera LA, Rodriguez U, Gebhart E, Ostrosky-Wegman P. Instituto de Investigaciones Biomedicas, Universidad Nacional Autonoma de Mexico, Mexico City, DF, Mexico. <mailto:metil@hotmail.com>

“Neurocysticercosis (NCC) has been associated with a high frequency of DNA damage in human circulating lymphocytes and more recently with the development of hematological malignancies. **(Background: Neurocysticercosis is the most common parasitic infection of the central nervous system. Tissue-invading larval forms of the pork tapeworm Taenia solium cause the disease. Historically, neurocysticercosis was endemic to only Latin America, Asia, and Africa, though it has become increasingly frequent in the US since the 1980s. Because of this epidemiological change, all general pediatricians should become familiar with its disease process.)** Chronic inflammation, a common feature of helminthic infections, has been proposed to play a key role in carcinogenesis induced by parasites...

**These results suggest that persistent antigen stimulation can cause chromosome instability in lymphocytes from patients with NCC and should be considered as an additional mechanism whereby parasites may induce cancer.”** -PMID: 11682640 [PubMed - indexed for MEDLINE]

**Trans R Soc Trop Med Hyg 2000 Jan-Feb;94(1):61-5-Possible association between Taenia solium cysticercosis and cancer: increased frequency of DNA damage in peripheral lymphocytes from neurocysticercosis patients.**

Herrera LA, Ramirez T, Rodriguez U, Corona T, Sotelo J, Lorenzo M, Ramos F, Verdorfer I, Gebhart E, Ostrosky-Wegman P. Instituto de Investigaciones Biomedicas, Universidad Nacional Autonoma de Mexico (UNAM), Mexico, D.F., Mexico. <mailto:metil@hotmail.com>

**“Helminths, particularly some Schistosoma (blood flukes) species, have been associated with cancer in humans.** Neurocysticercosis, produced by cysticerci of the helminth Taenia solium, **has been associated with the emergence of brain tumours and haematological malignancies...”** PMID: 10748903 [PubMed - indexed for MEDLINE] Am J Surg Pathol 1984 Jan;8(1):73-7

**Human ectopic fascioliasis in the cecum.** Park CI, Kim H, Ro JY, Gutierrez Y.

“A case of ectopic human Fasciola spp. infection in the cecal wall is reported. The patient, a 27-year-old Korean woman, resident in Seoul, Korea, presented with nausea, vomiting, and epigastric tenderness. One week later a palpable mass was discovered in the right iliac fossa. A clinical diagnosis of a carcinoma of the colon was made and the patient underwent a cecal resection. **The mass proved to be an inflammatory reaction containing numerous tracts made by the migrating fluke, (parasite).**” Fasciola sp.-PMID: 6696167 [PubMed - indexed for MEDLINE]

### Clinical study abstracts showing the potential benefits of Mangosteen, Coco (Dark Chocolate), Green Tea and Aloe Vera in their fight against cancer

I was first introduced to a Mangosteen juice product in June of 2004. I was very impressed with the benefits people were receiving so I decided to do some research. The amount of information was so extensive that I

decided to include a few of the studies I found in this report. The medical profession may not tell you about all of the science behind many of the natural products that are on the market today. So, I decided to see what I could find. I learned that the Mangosteen fruit comes primarily from South East Asia. This fruit has many health enhancing properties primarily from powerful antioxidants called Xanthonenes.

Besides the Mangosteen I found other products that may be beneficial for just about everyone, especially cancer patients and those who would rather not have cancer. I was looking for scientific support for the following: **Trace Minerals, Aloe Vera, and Green Tea**. Well, I have included some of the studies that I found in this report. So I went to [www.pubmed.gov](http://www.pubmed.gov) and typed in the words: Mangosteen, Xanthonenes, Aloe Vera and Greet Tea and when I found out the names of some of the different Xanthonenes I also added their names to the search. I found that the Mangosteen Fruit also has anti-parasitic properties.

Anyway, here is the science that convinced me to include it in my report.

Back in 2004 when I started the research on Mangosteen I had given a bottle to my wife to see how it would help her with the two herniated discs that she has in her neck and back. After a week and half I asked my wife if she had any success. She told me that she did not have any need during that time to take her pain medicine unless she did something that she shouldn't have done.

For this report I primarily focused on two aspects of the many benefits that the Mangosteen fruit has been providing to its users. Since many cancer patients encounter pain along with the cancer I found some of the scientific evidence that would support its use for pain and cancer.

### **Mangosteen and Pain**

**Mol Pharmacol. 2004 Sep;66(3):667-74. gamma-Mangostin inhibits inhibitor-kappaB kinase activity and decreases lipopolysaccharide-induced cyclooxygenase-2 gene expression in C6 rat glioma cells.**

**Nakatani K, Yamakuni T, Kondo N, Arakawa T, Oosawa K, Shimura S, Inoue H, Ohizumi Y.- Department of Pharmaceutical Molecular Biology, Graduate School of Pharmaceutical Sciences, Tohoku University, Aoba, Aramaki, Aoba-ku, Sendai 980-8578, Japan.**

We investigated the effect of gamma-mangostin purified from the fruit hull of the medicinal plant *Garcinia mangostana* on spontaneous prostaglandin E(2) (PGE(2)) genase release and inducible cyclooxy-2 (COX-2) gene expression in C6 rat glioma cells. An 18-h treatment with gamma-mangostin potently inhibited spontaneous PGE(2) release in a concentration-dependent manner with the IC(50) value of approximately 2 microM, without affecting the cell viability even at 30 microM. By immunoblotting and reverse-transcription polymerase chain reaction, we showed that gamma-mangostin concentration-dependently inhibited lipopolysaccharide (LPS)-induced expression of COX-2 protein and its mRNA, but not those of constitutive COX-1 cyclooxygenase. Because LPS is known to stimulate inhibitor kappaB (IkappaB) kinase (IKK)-mediated phosphorylation of IkappaB followed by its degradation, which in turn induces nuclear factor (NF)-kappaB nuclear translocation leading to transcriptional activation of COX-2 gene, the effect of gamma-mangostin on the IKK/IkappaB cascade controlling the NF-kappaB activation was examined.

An in vitro IKK assay using IKK protein immunoprecipitated from C6 cell extract showed that this compound inhibited IKK activity in a concentration-dependent manner, with the IC(50) value of approximately 10 microM. Consistently gamma-mangostin was also observed to decrease the LPS-induced IkappaB degradation and phosphorylation in a concentration-dependent manner, as assayed by immunoblotting. Furthermore, luciferase reporter assays showed that gamma-mangostin reduced the LPS-inducible activation of NF-kappaB-and human COX-2 gene promoter region-dependent transcription. gamma-Mangostin also inhibited rat carrageenan-induced paw edema. **These results suggest that gamma-mangostin directly inhibits IKK activity and thereby prevents COX-2 gene transcription, an NF-kappaB target gene, probably to decrease the inflammatory agent-stimulated PGE(2) production in vivo, and is a new useful lead compound for anti-inflammatory drug development.** PMID: 15322259 [PubMed - in process]

**Biochem Pharmacol.** 2002 Jan 1;63(1):73-9. - Inhibition of cyclooxygenase and prostaglandin E2 synthesis by gamma-mangostin, a xanthone derivative in Mangosteen, in C6 rat glioma cells. Nakatani K, Nakahata N, Arakawa T, Yasuda H, Ohizumi Y.- Department of Pharmaceutical Molecular Biology, Graduate School of Pharmaceutical Sciences, Tohoku University, Aoba, Aramaki, Aoba-ku, 980-8578, Sendai, Japan.

The fruit hull of Mangosteen, *Garcinia mangostana* L., has been used for many years as a medicine for treatment of skin infection, wounds, and diarrhea in Southeast Asia. In the present study, we examined the effect of gamma-mangostin, a tetraoxygenated diprenylated xanthone contained in Mangosteen, on arachidonic acid (AA) cascade in C6 rat glioma cells. gamma-Mangostin had a potent inhibitory activity of prostaglandin E2 (PGE2) release induced by A23187, a Ca<sup>2+</sup> ionophore. The inhibition was concentration-dependent, with the IC<sub>50</sub> value of about 5 microM. gamma-Mangostin had no inhibitory effect on A23187-induced phosphorylation of p42/p44 extracellular signal regulated kinase/mitogen-activated protein kinase or on the liberation of [14C]-AA from the cells labeled with [14C]-AA. However, gamma-mangostin concentration-dependently inhibited the conversion of AA to PGE2 in microsomal preparations, showing its possible inhibition of cyclooxygenase (COX). In enzyme assay in vitro, gamma-mangostin inhibited the activities of both constitutive COX (COX-1) and inducible COX (COX-2) in a concentration-dependent manner, with the IC<sub>50</sub> values of about 0.8 and 2 microM, respectively. **Lineweaver-Burk plot analysis indicated that gamma-mangostin competitively inhibited the activities of both COX-1 and -2. This study is a first demonstration that gamma-mangostin, a xanthone derivative, directly inhibits COX activity.** PMID: 11754876 [PubMed - indexed for MEDLINE]

**Shankaranarayan D, Gopalakrishnan C, Kameswaran L. Pharmacological profile of mangostin and its derivatives. Arch Int Pharmacodyn Ther. 1979 Jun;239(2):257-69.**

**Pharmacological profile of mangostin and its derivatives.-Shankaranarayan D, Gopalakrishnan C, Kameswaran L.-Mangostin (M), a naturally occurring xanthone in the rinds of the fruits of *Garcinia mangostana* Linn.**

(Guttiferae) and its derivatives such as 3-O-methyl mangostin (MM), 3,6-di-O-methyl mangostin (DM), 1-isomangostin (IM), mangostin triacetate (MT), mangostin 3,6-di-O-(tetra acetyl) glucoside (MTG) and mangostin-6,6-di-O-glucoside (MOG) were screened for various pharmacological effects in experimental animals... M, IM and MT **produced pronounced anti-inflammatory activity** both by intraperitoneal and oral routes in rats as tested by carrageenin-induced hind paw oedema, cotton pellet implantation and granuloma pouch techniques. Anti-inflammatory activity for M, IM and MT was observed even in bilaterally adrenalectomised rats. M, IM and MT did not produce any mast cell membrane stabilising effect and the degranulation effect of polymyxin B, diazoxide and Triton X-100 on rat peritoneal mast cells in vitro was not prevented. M, IM and MT did not alter the prothrombin time of albino rats. **M alone produced significant antiulcer activity in rats.**-PMID: 314790 [PubMed - indexed for MEDLINE]

### **Mangosteen and Cancer**

**Bioorg Med Chem.** 2005 Aug 17; [Epub ahead of print]**Xanthenes induce cell-cycle arrest and apoptosis in human colon cancer DLD-1 cells.**

**Matsumoto K, Akao Y, Ohguchi K, Ito T, Tanaka T, Iinuma M, Nozawa Y.**

Gifu International Institute of Biotechnology, 1-1 Naka-Fudogaoka, Kakamigahara, Gifu 504-0838, Japan; Gifu Prefectural Institute for Bio-industrial Technology, 3481-2 Kamihachiya, Hachiya, Minokamo, Gifu 505-0004, Japan.

We investigated the antiproliferative effects of four structurally similar prenylated xanthenes, alpha-mangostin, beta-mangostin, gamma-mangostin, and methoxy-beta-mangostin, in human colon cancer DLD-1 cells. These xanthenes differ in the number of hydroxyl and methoxy groups. Except for methoxy-beta-mangostin, the other three xanthenes strongly inhibited cell growth at 20 microM and their antitumor efficacy was correlated with the number of hydroxyl groups. Hoechst 33342 nuclear staining and nucleosomal DNA-gel electrophoresis revealed that the antiproliferative effects of alpha- and gamma-mangostin, but not that of beta-mangostin, were associated with apoptosis. It was also shown that their antiproliferative effects were associated with cell-cycle arrest by affecting the expression of cyclins, cdc2, and p27; G1 arrest was by alpha-mangostin and beta-mangostin, and S arrest by gamma-mangostin.

**These findings provide a relevant basis for the development of xanthenes as an agent for cancer prevention and combination therapy with anti-cancer drugs.** PMID: 16112579 [PubMed - as supplied by publisher]

**Bioorg Med Chem. 2004 Nov 15;12(22):5799-806. -Preferential target is mitochondria in alpha-mangostin-induced apoptosis in human leukemia HL60 cells.**

**Matsumoto K, Akao Y, Yi H, Ohguchi K, Ito T, Tanaka T, Kobayashi E, Iinuma M, Nozawa Y.-Gifu International Institute of Biotechnology, 1-1 Naka-Fudogaoka, Kakamigahara, Gifu 504-0838, Japan. kmatsumo@giib.or.jp**

Our previous study has shown that alpha-mangostin, a xanthone from the pericarps of Mangosteen, induces caspase-3-dependent apoptosis in HL60 cells. In the current study, we investigated the mechanism of apoptosis induced by alpha-mangostin in HL60 cells. Alpha-mangostin-treated HL60 cells demonstrated caspase-9 and -3 activation but not -8, which leads us to assume that alpha-mangostin may mediate the mitochondrial pathway in the apoptosis. Parameters of mitochondrial dysfunction including swelling, loss of membrane potential (deltapsim), decrease in intracellular ATP, ROS accumulation, and cytochrome c/AIF release, were observed within 1 or 2 h after the treatment. On the other hand, alpha-mangostin-treatment did not affect expression of bcl-2 family proteins and activation of MAP kinases. These findings indicate that alpha-mangostin preferentially targets mitochondria in the early phase, resulting in indication of apoptosis in HL60 cells. Furthermore, we examined the structure-activity relationship between xanthone derivatives including alpha-mangostin and the potency of deltapsim-loss in HL60 cells. Interestingly, replacement of hydroxyl group by methoxy group remarkably decreased its potency. It was also shown that the cytotoxicity substantially correlated with deltapsim decrease. **These results indicate that alpha-mangostin and its analogs would be candidates for preventive and therapeutic application for cancer treatment.**-PMID: 15498656 [PubMed - in process]

**J Ethnopharmacol. 2004 Jan;90(1):161-6.-Antiproliferation, antioxidation and induction of apoptosis by Garcinia mangostana (mangosteen) on SKBR3 human breast cancer cell line.**

**Moongkarndi P, Kosem N, Kaslungka S, Luanratana O, Pongpan N, Neungton N.-Department of Microbiology, Faculty of Pharmacy, Mahidol University, Sri Ayudthaya Road, Rajdhevee, Bangkok 10400, Thailand. pypmk@mahidol.ac.th**

This study was designed to determine the antiproliferative, apoptotic and antioxidative properties of crude methanolic extract (CME) from the pericarp of *Garcinia mangostana* (family Guttiferae) using human breast cancer (SKBR3) cell line as a model system. SKBR3 cells were cultured in the presence of CME at various concentrations (0-50 microg/ml) for 48 h and the percentage of cell viability was evaluated by 3-(4,5-dimethylthiazol-2-yl)-2,5-di phenyl tetrazolium bromide (MTT) assay. CME showed a dose-dependent inhibition of cell proliferation with ED(50) of 9.25+/-0.64 microg/ml. We found that antiproliferative effect of CME was associated with apoptosis on breast cancer cell line by determinations of morphological changes and oligonucleosomal DNA fragments. In addition, CME at various concentrations and incubation times were also found to inhibit ROS production. **These investigations suggested that the methanolic extract from the pericarp of *Garcinia mangostana* had strong antiproliferation, potent antioxidation, and induction of apoptosis. Thus, it indicates that this substance can show different activities and has potential for cancer chemoprevention, which were dose dependent as well as exposure time dependent.** PMID: 14698525 [PubMed - indexed for MEDLINE]

**Asian Pac J Cancer Prev. 2004 Oct-Dec;5(4):433-8.-Inhibitory effects of crude alpha-mangostin, a xanthone derivative, on two different categories of colon preneoplastic lesions induced by 1, 2-dimethylhydrazine in the rat.-Nabandith V, Suzui M, Morioka T, Kaneshiro T, Kinjo T, Matsumoto K, Akao Y, Iinuma M, Yoshimi N.-Tumor Pathology Division, Faculty of Medicine, University of the Ryukyus, Okinawa 903-0215, Japan.**

The purpose of this study was to examine whether crude alpha-mangostin (a major xanthone derivative in Mangosteen pericarp (*Garcinia mangostana*)) has short-term chemopreventive effects on putative preneoplastic lesions involved in rat colon carcinogenesis. The crude preparation was obtained by simple recrystallization of an

ethylacetate extract of Mangosteen pericarps. A total of 33 five-week-old male F344 rats were randomly divided into 5 experimental groups. Rats in groups 1-3 were given a subcutaneous injection of 1,2-dimethylhydrazine (DMH)(40 mg/kg body weight) once a week for 2 weeks. Starting one week before the first injection of DMH, rats in groups 2 and 3 were fed a diet containing 0.02% and 0.05% crude alpha-mangostin, respectively, for 5 weeks. Rats in group 4 also received the diet containing 0.05% crude alpha-mangostin, while rats in group 5 served as untreated controls.

The experiment was terminated 5 weeks after the start. Dietary administration of crude alpha-mangostin at both doses significantly inhibited the induction and/or development of aberrant crypt foci (ACF) ( $P < 0.05$  for 0.02% crude alpha-mangostin,  $P < 0.01$  for 0.05% crude alpha-mangostin), when compared to the DMH-treated group (group 1). Moreover, treatment of rats with 0.05% crude alpha-mangostin significantly decreased dysplastic foci (DF) ( $P < 0.05$ ) and beta-catenin accumulated crypts (BCAC) ( $P < 0.05$ ), to below the group 1 values. The proliferating cell nuclear antigen (PCNA) labeling indices of colon epithelium and focal lesions in groups 2 and 3 were also significantly lower than in group 1 and this effect occurred in a dose dependent manner of the crude alpha-mangostin. **This finding that crude alpha-mangostin has potent chemopreventive effects in our short-term colon carcinogenesis bioassay system suggests that longer exposure might result in suppression of tumor development.**-Publication Types: • Evaluation Studies-PMID: 15546251 [PubMed - indexed for MEDLINE]

**J Nat Prod. 2003 Aug;66(8):1124-7.-Induction of apoptosis by xanthenes from mangosteen in human leukemia cell lines. Matsumoto K, Akao Y, Kobayashi E, Ohguchi K, Ito T, Tanaka T, Iinuma M, Nozawa Y.**

**Gifu International Institute of Biotechnology, 1-1 Naka-Fudogaoka, Kakamigahara, Gifu 504-0838, Japan. kmatsumoto@giib.or.jp**

We examined the effects of six xanthenes from the pericarps of Mangosteen, *Garcinia mangostana*, on the cell growth inhibition of human leukemia cell line HL60. **All xanthenes displayed growth inhibitory effects. Among them, alpha-mangostin showed complete inhibition at 10 microM through the induction of apoptosis.** PMID: 12932141 [PubMed - indexed for MEDLINE]

**Fitoterapia. 2004 Jun;75 (3-4):375-7.-Antiproliferative activity of Thai medicinal plant extracts on human breast adenocarcinoma cell line.**

**Moongkarndi P, Kosem N, Luanratana O, Jongsomboonkusol S, Pongpan N.- Department of Microbiology, Faculty of Pharmacy, Mahidol University, Rajdhevee, Sri Ayudthaya Rd, Bangkok 10400, Thailand. pypmk@mahidol.ac.th**

Ethanollic extracts of selected nine Thai medicinal plants were tested for antiproliferative activity against SKBR3 human breast adenocarcinoma cell line using MTT assay. **Garcinia mangostana showed the most potent activity.** However, all plant extracts showed activity in potential range for further investigation on cancer cells. Copyright 2004 Elsevier B.V. PMID: 15158999 [PubMed - indexed for MEDLINE]

**Planta Med. 2002 Nov;68 (11):975-9. -Garcinone E, a xanthone derivative, has potent cytotoxic effect against hepatocellular carcinoma cell lines.**

**Ho CK, Huang YL, Chen CC.- Department of Medical Research & Education, Veterans General Hospital, Taipei, ROC.**

Treatment of hepatocellular carcinomas (HCCs) with chemotherapy has generally been disappointing and it is most desirable to have more effective new drugs. We extracted and purified 6 xanthone compounds from the rinds (peel) of the fruits of *Garcinia mangostana* L., using partitioned chromatography and then tested the cytotoxic effects of these compounds on a panel of 14 different human cancer cell lines including 6 hepatoma cell lines, based on the MTT method. Several commonly used chemotherapeutic agents were included in the assay to determine the relative potency of the potential new drugs.

**Our results have shown that one of the xanthone derivatives, which could be identified as garcinone E has potent cytotoxic effect on all HCC cell lines as well as on the other gastric and lung cancer cell**

lines included in the screen. **We suggest that garcinone E may be potentially useful for the treatment of certain types of cancer.** PMID: 12451486 [PubMed - indexed for MEDLINE]

Lu ZX, Hasmeda M, Mahabusarakam W, Ternai B, Ternai PC, Polya GM.

**Inhibition of eukaryote protein kinases and of a cyclic nucleotide-binding phosphatase by prenylated xanthenes.-Chem Biol Interact.** 1998 Jul 3;114(1-2):121-40.

Lu ZX, Hasmeda M, Mahabusarakam W, Ternai B, Ternai PC, Polya GM. School of Biochemistry, La Trobe University, Bundoora, Victoria, Australia.

A series of prenylated xanthenes are variously potent inhibitors of the catalytic subunit (cAK) of rat liver cyclic AMP-dependent protein kinase (PKA), rat brain Ca<sup>2+</sup> and phospholipid-dependent protein kinase C (PKC), chicken gizzard myosin light chain kinase (MLCK), wheat embryo Ca<sup>2+</sup>-dependent protein kinase (CDPK) and potato tuber cyclic nucleotide-binding phosphatase (Pase). The prenylated xanthenes examined are mostly derivatives of alpha-mangostin in which the 3-hydroxyl and 6-hydroxyl are variously substituted with groups R or R', respectively, or derivatives of 3-isomangostin (mangostanol) in which the 9-hydroxyl is substituted with groups R' or the prenyl side chain is modified. The most potent inhibitors of cAK have non-protonatable and relatively small R' and R groups. Conversely, the most potent inhibitors of PKC and MLCK have bulkier and basic R' groups. Some prenylated xanthenes are also potent inhibitors of CDPK. PKC and cAK are competitively inhibited by particular prenylated xanthenes whereas the compounds that are the most potent inhibitors of MLCK and CDPK are non-competitive inhibitors. Prenylated xanthenes having relatively small and non-protonatable R' and R groups inhibit a high-affinity cyclic nucleotide binding Pase in a non-competitive fashion. **(Protein kinases make up a veritable treasure trove of targets for a variety of indications, including diabetes, inflammatory disorders, and especially cancer.)** PMID: 9744560 [PubMed - indexed for MEDLINE]

#### Aloe Vera

Int Immunopharmacol. 2004 Dec 20;4(14):1775-84.-Aloe-emodin modulates PKC isozymes, inhibits proliferation, and induces apoptosis in U-373MG glioma cells, Acevedo-Duncan M, Russell C, Patel S, Patel R.

Department of Chemistry, University of South Florida, Tampa, FL, USA. macevedo@chuma.cas.usf.edu

**Aloe-emodin (1,8-dihydroxy-3-[hydroxymethyl]-anthraquinone) purified from Aloe vera leaves has been reported to have antitumor activity.** The objectives of our research were to determine how aloe-emodin regulates the cell cycle, cell proliferation, and protein kinase C (PKC) during glioma growth and development. To establish the cell cycle effects of aloe-emodin on brain cells [transformed glia cell line (SVG) and human glioma U-373MG cell line (U-373MG)], cells were treated with either dimethylsulfoxide (DMSO; control) or aloe-emodin (40 microM). Results from flow cytometry demonstrated that aloe-emodin delayed the number of cells entering and exiting DNA synthesis (S) phase in both SVG and U-373MG cells indicating that aloe-emodin may inhibit S phase progression. Assessment of cell viability demonstrated that SVG and U-373MG glioma cell were highly sensitive to aloe-emodin. The aloe-emodin-induced decreased proliferation was sustained at 48-96 h. A PKC activity assay was quantified to establish the role of PKC in aloe-emodin's mode of action. Exposure of SVG and U-373MG glioma cells to aloe-emodin suppressed PKC activity and reduced the protein content of most of the PKC isozymes. **We determined that cancer growth inhibition by aloe-emodin was due to apoptosis (i.e., programmed cell death). Taken together, these results support the hypothesis that aloe-emodin represents a novel antitumor chemotherapeutic drug.** PMID: 15531293 [PubMed - indexed for MEDLINE]

Int Immunopharmacol. 2004 Mar;4(3):411-8.-Mannan from Aloe saponaria inhibits tumoral cell activation and proliferation.-Sampedro MC, Artola RL, Murature M, Murature D, Ditamo Y, Roth GA, Kivatinitz S.-Departamento de Quimica Biologica  
CIQUIBIC, Facultad Ciencias Quimicas, Universidad Nacional de Cordoba, Ciudad Universitaria, C5000GYA-Cordoba 5016, Argentina.

In this study, we tested the antiproliferative effects of mannan from Aloe saponaria using normal murine (SpMC) and human cells (PBMC) and several tumoral cell lines. Employing flow cytometry, it could be determined that mannan inhibits the proliferative response in normal and tumoral cells. Mannan affects the expression of CD3 (+) SpMC indicating that mannan inhibits mainly T lymphocyte proliferative response. Also in SpMC cultured

with or without mitogen mannan produces an increase of an activation marker (CD25). On C1498 cell line, mannan reduces CD3 expression and abolishes the CD25 expression. **In conclusion, mannan has a dual beneficial effect when applied to normal and tumoral cells at the same time by inhibiting the activation of cancer cells and improving that of normal ones.** PMID: 15037218 [PubMed - indexed for MEDLINE]

Life Sci. 2002 Sep 6;71(16):1879-92.-The antiproliferative activity of aloe-emodin is through p53-dependent and p21-dependent apoptotic pathway in human hepatoma cell lines. Kuo PL, Lin TC, Lin CC.

Graduate Institute of Natural Products, College of Pharmacy, Kaohsiung Medical University, Kaohsiung 807, Taiwan, ROC.

**The aim of this study is to investigate the anticancer effect of aloe-emodin in two human liver cancer cell lines,** Hep G2 and Hep 3B. We observed that aloe-emodin inhibited cell proliferation and induced apoptosis in both examined cell lines, but with different the antiproliferative mechanisms. In Hep G2 cells, aloe-emodin induced p53 expression and was accompanied by induction of p21 expression that was associated with a cell cycle arrest in G1 phase. In addition, aloe-emodin had a marked increase in Fas/APO1 receptor and Bax expression. In contrast, with p53-deficient Hep 3B cells, the inhibition of cell proliferation of aloe-emodin was mediated through a p21-dependent manner that did not cause cell cycle arrest or increase the level of Fas/APO1 receptor, but rather promoted aloe-emodin induced apoptosis by enhancing expression of Bax. **These findings suggest that aloe-emodin may be useful in liver cancer prevention.** PMID: 12175703 [PubMed - indexed for MEDLINE]

**Am J Dermatopathol. 2002 Feb;24(1):17-22.-The effect of aloe emodin on the proliferation of a new merkel carcinoma cell line.- Wasserman L, Avigad S, Beery E, Nordenberg J, Fenig E.**

Felsenstein Medical Research Center, Sackler Faculty of Medicine, Tel Aviv University, Rabin Medical Center Beilinson Campus, Petah Tikva 49100, Israel. yardenam@clalit.org.ie

A free-floating cell line has been established from a metastatic lesion of a Merkel cell carcinoma (MCC) patient. The cell line was characterized by immunocytochemical reactions with antibodies against the epithelial and neuroendocrine antigens: cytokeratin 20, neuron-specific enolase, chromogranin A, neurofilament protein, synaptophysin, and calcitonin. Karyotype analysis of the MCC cells showed deletion in chromosomes 3 and 7, loss of chromosome 10, and several translocations in other chromosomes. No mutation was detected in the TP53 gene, after analyzing the complete coding region. Growth factors such as basic fibroblast growth factor, transforming growth factor-beta, and nerve and epidermal growth factors had no effect on the proliferation of the cells. The differentiation-inducing agents sodium butyrate and dimethyl sulfoxide, especially the former, markedly inhibited the proliferation of the MCC cells. Aloe emodin, a natural constituent of aloe vera leaves, significantly inhibited the growth of MCC cells. **Aloe emodin has been reported to be nontoxic for normal cells but to possess specific toxicity for neuroectodermal tumor cells. Differentiation-inducing agents, and aloe emodin, merit further investigation as potential agents for treating MCC.** PMID: 11803275 [PubMed - indexed for MEDLINE]

**Carcinogenesis. 1999 Aug;20(8):1637-40.-In vitro chemopreventive effects of plant polysaccharides (Aloe barbadensis miller, Lentinus edodes, Ganoderma lucidum and Coriolus versicolor).- Kim HS, Kacew S, Lee BM.**

Division of Toxicology, College of Pharmacy, Sungkyunkwan University, Changan-ku, Chunchun-dong, Kyunggi-do, Suwon 440-746, Korea.

A plant polysaccharide, **Aloe gel extract, was reported to have an inhibitory effect** on benzo[a]pyrene (B[a]P)-DNA adduct formation in vitro and in vivo. Hence, chemopreventive effects of plant polysaccharides [Aloe barbadensis Miller (APS), Lentinus edodes (LPS), **Ganoderma lucidum** (GPS) and Coriolus versicolor (CPS)] were compared using in vitro short-term screening methods associated with both initiation and promotion processes in carcinogenesis. In B[a]P-DNA adduct formation, APS (180 micrograms/ml) was the most effective in inhibition of B[a]P binding to DNA in mouse liver cells. Oxidative DNA damage (by 8-hydroxydeoxyguanosine) was significantly decreased by APS (180 micrograms/ml) and CPS (180 micrograms/ml). In induction of glutathione S-transferase activity, GPS was found to be the most effective among plant polysaccharides. In screening anti-tumor promoting effects, APS (180 micrograms/ml) significantly inhibited

phorbol myristic acetate (PMA)-induced ornithine decarboxylase activity in Balb/3T3 cells. In addition, APS significantly inhibited PMA-induced tyrosine kinase activity in human leukemic cells. APS and CPS significantly inhibited superoxide anion formation. **These results suggest that some plant polysaccharides produced both anti-genotoxic and anti-tumor promoting activities in in vitro models and, therefore, might be considered as potential agents for cancer chemoprevention.**-PMID: 10426820 [PubMed - indexed for MEDLINE]

**Int J Tissue React. 1998;20(4):115-8.-The therapeutic potential of Aloe Vera in tumor-bearing rats.-Corsi MM, Bertelli AA, Gaja G, Fulgenzi A, Ferrero ME.**

Institute of General Pathology, Medical Faculty, University of Milan, Italy.

Aloe Vera has been claimed to contain several important therapeutic properties, including anticancer effects. The effect of Aloe Vera administration was studied on a pleural tumor in rat. Growth of Yoshida AH-130 ascite hepatoma cells injected (2 x 10<sup>5</sup>) in 0.1 ml) into pleura of male inbred Fisher rats was evaluated at different times (7th and 14th days). **Data show that the use of Aloe Vera proved a therapeutic method, and that the present experimental model could be useful in the study of other therapeutics treatments in vivo.**-PMID: 10093794 [PubMed - indexed for MEDLINE]

**Nutrition. 1998 Nov-Dec;14(11-12):846-52.-Vitamin C and aloe vera supplementation protects from chemical hepatocarcinogenesis in the rat.- Shamaan NA, Kadir KA, Rahmat A, Ngah WZ.**

Department of Biochemistry and Microbiology, Universiti Putra Malaysia, Selangor, Malaysia.

**The effects of vitamin C and aloe vera gel extract supplementation on induced hepatocarcinogenesis in male Sprague-Dawley rats** (120-150 g) by diethylnitrosamine (DEN) and 2-acetylaminofluorene (AAF) was investigated. The severity of the carcinogenesis process was determined by measuring gamma-glutamyl transpeptidase (GGT) and the placental form of glutathione S-transferase (GSTP) histochemically in situ and in plasma and liver fractions. In addition, plasma alkaline phosphatase (ALP) and liver microsomal uridine diphosphate glucuronyl transferase (UDPGT) activity were also determined. Administration of DEN/AAF caused an increase in the surface area and number of enzyme-positive foci (both GGT and GSTP) compared with control. Supplementation of vitamin C or aloe vera gel extract to the cancer-induced rats suppressed this increase significantly (P < 0.05; P < 0.001). Increases in liver UDPGT, GGT, and GSTP activities were also observed with cancer induction that were again suppressed with either vitamin C or aloe vera gel supplementation. Plasma GGT in the DEN/AAF rats were determined monthly for the duration of the experiment and found to be reduced as early as 1 mo with aloe vera gel supplementation and 2 mo with vitamin C supplementation. **In conclusion, vitamin C and aloe vera gel extract supplementation were found to be able to reduce the severity of chemical hepatocarcinogenesis.**-PMID: 9834927 [PubMed - indexed for MEDLINE]

Vopr Onkol. 1986;32(12):38-40.-[Antimetastatic properties of aloe juice]-[Article in Russian]- Gribel' NV, Pashinskii VG.

**An evaluation of antimetastatic properties of succus Aloes was carried out using three types of experimental tumors of mice and rats. It was found that succus Aloes treatment contributes to reduction of tumor mass, metastatic foci and metastasis frequency at different stages of tumor progress without affecting major tumor growth. Succus Aloes potentiates the antitumor effect of 5-fluorouracil and cyclophosphamide as components of combination chemotherapy.**-PMID: 3798837 [PubMed - indexed for MEDLINE]

### **Cocoa (Dark Chocolate)**

Since many people around the world enjoy the taste of cocoa (Dark Chocolate) I thought I would include some of the science that I found at [www.pubmed.gov](http://www.pubmed.gov) in this report.

**Eur J Cancer Prev. 2006 Aug;15(4):353-61.**

**In-vitro effects of polyphenols from cocoa and beta-sitosterol on the growth of human prostate cancer and normal cells.-Jourdain C, Tenca G, Deguercy A, Troplin P, Poelman D.**

BIOAlternatives, Gençay, France. [cjo@bioalternatives.com](mailto:cjo@bioalternatives.com)

**Cocoa contains many different types of physiologically active components. It was shown that cocoa beans are rich in specific antioxidants such as flavonoids, catechins, epicatechins and proanthocyanidins.** Additionally, beta-sitosterol, the most common phytosterol, may play a protective role in the development of cancer. The aim of this in-vitro study was to evaluate the inhibitory effect of different cocoa polyphenols extracts, alone or combined with beta-sitosterol, on two human prostate cancer cell lines (nonmetastatic 22Rv1 cells and metastatic DU145 cells) and a normal human prostate cell line (RWEP-1). A synergy between beta-sitosterol and cocoa polyphenols extract was also researched. Cells were treated independently with five products from 1 to 72 h: (1/) synthetic beta-sitosterol, (2/) a cocoa polyphenols extract supplemented with beta-sitosterol, (3/) three different cocoa polyphenols extracts naturally containing beta-sitosterol. In the experiment, beta-sitosterol was tested from 10(-6) to 10(-3) %; cocoa polyphenols extract supplementation was with 0.72% beta-sitosterol; finally cocoa polyphenols extracts were added to the cells at very low concentrations ranging from 0.001 to 0.2%. The growth and viability of cells were measured using colorimetric assay at 1, 3, 6, 24, 48, and 72 h of treatment. IC50 and IC100 corresponding to the concentration leading to a decrease of 50% and 100% of cell growth were determined. At the highest tested concentration, cocoa polyphenols extracts induced a complete inhibition of growth of metastatic and nonmetastatic cancer cell lines. In addition, cocoa polyphenols extracts were more active against local cancer cells than against metastatic cells. Moreover, at the highest tested concentration, cocoa polyphenols extracts are not effective on a normal prostate cell lines. Beta-sitosterol induced low growth inhibition of both cancer cell line. Cocoa polyphenols extracts, however, were significantly more active and showed a strong and fast inhibition of cell growth than beta-sitosterol alone. No synergy or addition was observed when beta-sitosterol was tested together with the cocoa polyphenols extract. **Our results show that cocoa polyphenols extracts have an antiproliferative effect on prostate cancer cell growth but not on normal cells, at the highest tested concentration.**-PMID: 16835506 [PubMed - indexed for MEDLINE]

**Free Radic Biol Med. 2006 Oct 15;41(8):1247-56. Epub 2006 Jul 11.**

**Procyanidins protect Caco-2 cells from bile acid- and oxidant-induced damage.-Erlejman AG, Fraga CG, Oteiza PI.**

IQUIFIB-Department of Biological Chemistry (UBA-CONICET), School of Pharmacy and Biochemistry, University of Buenos Aires, Argentina.

**Procyanidins can exert cytoprotective, anti-inflammatory, and anticarcinogenic actions in the gastrointestinal tract. Previous evidence has shown that procyanidins can interact with synthetic membranes and protect them from oxidation and disruption. Thus, in this study we investigated the capacity of a hexameric procyanidin fraction (Hex) isolated from cocoa to protect Caco-2 cells from deoxycholic (DOC)-induced cytotoxicity,** cell oxidant increase, and loss of monolayer integrity. Hex interacted with the cell membranes without affecting their integrity, as evidenced by a Hex-mediated increase in the transepithelial electrical resistance, and inhibition of DOC-induced cytotoxicity. DOC induced an increase in cell oxidants, alterations in the paracellular transport, and redistribution of the protein ZO-1 from cell-cell contacts into the cytoplasm. Hex partially inhibited all these events at concentrations ranging from 2.5 to 20 microM. Similarly, Hex (5-10 microM) inhibited the increase in cell oxidants, and the loss of integrity of polarized Caco-2 cell monolayers induced by a lipophilic oxidant (2,2'-azobis (2,4-dimethylvaleronitrile). Results show that the assayed procyanidin fraction can interact with cell membranes and protect Caco-2 cells from DOC-induced cytotoxicity, oxidant generation, and loss of monolayer integrity.

**At the gastrointestinal tract, large procyanidins may exert beneficial effects in pathologies such as inflammatory diseases, alterations in intestinal barrier permeability, and cancer.**-PMID: 17015171 [PubMed - indexed for MEDLINE]

**Biofactors. 2005;23(3):141-50.**

**Extraction and chromatographic separation of anticarcinogenic fractions from cacao bean husk.-Lee KW, Hwang ES, Kang NJ, Kim KH, Lee HJ.**

Department of Food Science and Technology, School of Agricultural Biotechnology and Center for Agricultural Biomaterials, Seoul National University, Seoul 151-742, Republic of Korea.

**The utilization of cacao bean husk (CBH), a by-product of chocolate manufacture, would be both environmentally and economically beneficial. For this purpose, a process for effectively separating and fractionating CBH fractions having cancer preventive potential was developed in this study. For**

screening the fractions with potent cancer preventive activity, we examined the effect of extracts and fractions of CBH on the inhibition of gap-junction intercellular communication (GJIC) and the DNA synthesis of cancer cells, both of which are characteristics of the promotion and progression stages in carcinogenesis. The extracts of CBH (especially, the 60% ethanol fraction after extraction with 50% acetone) containing 43 wt.% polyphenol exerted an excellent protective effect on H<sub>2</sub>O<sub>2</sub>-induced inhibition of GJIC in WB-F344 rat liver epithelial cells as determined by the scrape-loading/dye transfer assay. The enhancement of GJIC by the extracts of CBH was approximately 10-fold higher than that of a well-known dietary chemopreventive component, vitamin C. The extracts of CBH (especially, the 60% ethanol fraction) also suppressed DNA synthesis in all liver, stomach, and colon cancer cells as demonstrated by the <sup>3</sup>H-thymidine incorporation assay, by approximately four-fold higher than that of vitamin C. **These results imply that the polyphenol extracts and fractions of CBH are effective functional materials to be used in either preventing or inhibiting cancer.**-PMID: 16410636 [PubMed - indexed for MEDLINE]

*Mol Cancer Ther.* 2005 Apr;4(4):537-46.

**Pentameric procyanidin from Theobroma cacao selectively inhibits growth of human breast cancer cells.-Ramljak D, Romanczyk LJ, Metheny-Barlow LJ, Thompson N, Knezevic V, Galperin M, Ramesh A, Dickson RB.**

Department of Oncology, The Research Building, Room W417, Lombardi Comprehensive Cancer Center, Georgetown University Medical Center, 3970 Reservoir Road, NW, Washington, District of Columbia 20057, USA.

**A naturally occurring, cocoa-derived pentameric procyanidin (pentamer) was previously shown to cause G0/G1 cell cycle arrest in human breast cancer cells by an unknown molecular mechanism. Here, we show that pentamer selectively inhibits the proliferation of human breast cancer cells (MDA MB-231, MDA MB-436, MDA MB-468, SKBR-3, and MCF-7) and benzo(a)pyrene-immortalized 184A1N4 and 184B5 cells. In contrast, normal human mammary epithelial cells in primary culture and spontaneously immortalized MCF-10A cells were significantly resistant. We evaluated whether this differential response to pentamer may involve depolarization of the mitochondrial membrane. Pentamer caused significant depolarization of mitochondrial membrane in MDA MB231 cells but not the more normal MCF-10A cells, whereas other normal and tumor cell lines tested gave variable results. Further investigations, using a proteomics approach with pentamer-treated MDA MB-231, revealed a specific dephosphorylation, without changes in protein expression, of several G1-modulatory proteins: Cdc2 (at Tyr15), forkhead transcription factor (at Ser256, the Akt phosphorylation site) and p53 (Ser392). Dephosphorylation of p53 (at Ser392) by pentamer was confirmed in MDA MB-468 cells. However, both expression and phosphorylation of retinoblastoma protein were decreased after pentamer treatment. Our results show that breast cancer cells are selectively susceptible to the cytotoxic effects of pentameric procyanidin, and suggest that inhibition of cellular proliferation by this compound is associated with the site-specific dephosphorylation or down-regulation of several cell cycle regulatory proteins.**-PMID: 15827326 [PubMed - indexed for MEDLINE]

I found a product called **Cocogevity** from **Youngevity** that contains the Cocoa extract, Mangosteen, Acai and Goji. To learn more about this product you can go to [www.GetHealthyNow.us](http://www.GetHealthyNow.us)

### Green Tea

**Biochem Biophys Res Commun.** 2005 Sep 2;334(3):947-53.-EGCG inhibits activation of the insulin-like growth factor-1 receptor in human colon cancer cells.- Shimizu M, Deguchi A, Hara Y, Moriwaki H, Weinstein IB.

Herbert Irving Comprehensive Cancer Center and Department of Medicine, Columbia University Medical Center, New York, NY 10032, USA; Department of Medicine, Gifu University School of Medicine, Gifu 501-1194, Japan.

The IGF/IGF-1R system, which includes the IGF, IGF-1R, and IGFBPs proteins, plays an important role in the development and growth of colorectal cancer. We previously reported that in the HT29 human colon cancer cell line EGCG, the major biologically active component of green tea, inhibits activation of the RTKs EGFR, HER2, and HER3, and that this is associated with inhibition of multiple downstream signaling pathways. Since IGF-1R is

also a RTK, in this study we examined the effects of EGCG on the activity of IGF/IGF-1R system in human colon cancer cells. We found that the colon cancer cell lines Caco2, HT29, SW837, and SW480 express high levels of the IGF-1R receptor, and that both SW837 and SW480 cells display constitutive activation of this receptor. Treatment of SW837 cells with 20µg/ml of EGCG (the IC(50) concentration for growth inhibition) caused within 6h a decrease in the phosphorylated (i.e., activated) form of the IGF-1R protein. At 12h, there was a decrease in the levels of both IGF-1 protein and mRNA and within 3-6h there was an increase in the levels of both IGFBP-3 protein and mRNA. The increased expression of the latter protein was sustained for at least 48h. When SW837 cells were treated with EGCG for a longer time, i.e., 96h, a very low concentration (1.0µg/ml) of EGCG also caused inhibition of activation of IGF-1R, a decrease in the IGF-1 protein, and an increase in the IGFBP-3 protein. EGCG also caused a decrease in the levels of mRNAs that encode MMPs-7 and -9, proteins that proteolyze IGFBP-3. In addition, treatment with EGCG caused a transient increase in the expression of TGF-beta2, an inducer of IGFBP-3 expression. These findings expand the roles of EGCG as an inhibitor of critical RTKs involved in cell proliferation, **providing further evidence that EGCG and related compounds may be useful in the chemoprevention or treatment of colorectal cancer.** PMID: 16053920 [PubMed - in process]

**Mutat Res. 2005 Jun 28;-Modulation of signal transduction by tea catechins and related phytochemicals.- Shimizu M, Weinstein IB.**

Herbert Irving Comprehensive Cancer Center and Department of Medicine, Columbia University Medical Center, HHSC-1509, 701 West 168 Street, NY 10032-2704, USA.

**Epidemiologic studies in human populations and experimental studies in rodents provide evidence that green tea and its constituents can inhibit both the development and growth of tumors at a variety of tissue sites. In addition, EGCG, a major biologically active component of green tea, inhibits growth and induces apoptosis in a variety of cancer cell lines.** The purpose of this paper is to review evidence that these effects are mediated, at least in part, through inhibition of the activity of specific receptor tyrosine kinases (RTKs) and related downstream pathways of signal transduction. We also review evidence indicating that the antitumor effects of the related polyphenolic phytochemicals resveratrol, genistein, curcumin, and capsaicin are exerted via similar mechanisms. Some of these agents (EGCG, genistein, and curcumin) appear to directly target specific RTKs, and all of these compounds cause inhibition of the activity of the transcription factors AP-1 and NF-kappaB, thus inhibiting cell proliferation and enhancing apoptosis. Critical areas of future investigation include: (1) identification of the direct molecular target(s) of EGCG and related polyphenolic compounds in cells; (2) the in vivo metabolism and bioavailability of these compounds; (3) the ancillary effects of these compounds on tumor-stromal interactions; (4) the development of synergistic combinations with other antitumor agents to enhance efficacy in cancer prevention and therapy, and also minimize potential toxicities.-PMID: 15992833 [PubMed - as supplied by publisher]

Chem Rec. 2005;5(3):119-32.-Green tea: Health benefits as cancer preventive for humans.-Fujiki H.

**Faculty of Pharmaceutical Sciences, Tokushima Bunri University, Yamashiro-cho, Tokushima 770-8514, Japan.**

Green tea is an acknowledged cancer preventive in Japan. The aim of this review article is to develop the concept of cancer prevention with green tea beverage for humans, which has largely been our exclusive research territory. This paper briefly reviews several topics, beginning with the introduction of our initial work on penta-O-galloyl-beta-D-glucose and (-)-epigallocatechin gallate (EGCG), the main constituent of green tea extract. The mechanisms of EGCG action, particularly the reduction of TNF-alpha are discussed, and we show how use of (3) H-EGCG revealed a wide range of target organs for cancer prevention. The results of an epidemiological study in Saitama Prefecture allowed us to determine the cancer preventive amount of green tea-10 Japanese-size cups per day, about 2.5 g green tea extract-which made it possible for us to introduce the two-stage strategy of cancer prevention with green tea. The first stage is the delay of cancer onset for the general population. The second stage is the prevention of recurrence of cancer for patients following cancer treatment. **Combination cancer prevention with green tea and cancer preventive drugs is proving especially beneficial for Japanese, who drink green tea every day.** And finally, the stimulating comments of Prof. Jim Watson have encouraged green tea scientists. (c) 2005 The Japan Chemical Journal Forum and Wiley Periodicals, Inc. Chem Rec 5: 119-132; 2005: Published online in Wiley InterScience (www.interscience.wiley.com) DOI 10.1002/tcr.20039. PMID: 15889414 [PubMed - in process]

**Cardiovasc Res. 2005 Aug 1;67(2):317-25.-Catechins prevent vascular smooth muscle cell invasion by inhibiting MT1-MMP activity and MMP-2 expression.-El Bedoui J, Oak MH, Anglard P, Schini-Kerth VB.**

Pharmacologie et Physico-Chimie des Interactions Cellulaires et Moleculaires, UMR CNRS 7034, France.

OBJECTIVE: Regular consumption of green tea is associated with a reduced risk of mortality due to coronary diseases and cancer. The present study examined whether a green tea extract (GTE) inhibits activation of matrix metalloproteinase-2 (MMP-2), a major collagenase involved in vascular remodeling of atherosclerotic plaques, in vascular smooth muscle cells (VSMCs). METHODS AND RESULTS: The expression of MMP-2 was assessed by Northern and Western blot analyses in human aortic VSMCs. MMP-2 activity was evaluated by zymography, membrane-type1-MMP (MT1-MMP, MMP-14) activity by an enzymatic assay, and cell invasion by a modified Boyden chamber assay. The thrombin-induced activation of secreted MMP-2 was abolished by GTE and the green tea polyphenols (-)-epigallocatechin-3-gallate (EGCG) and (-)-epicatechin-3-gallate (ECG). GTE reduced the expression of MMP-2 mRNA and protein. GTE, EGCG and ECG directly inhibited cell-associated MT1-MMP activity, the physiological activator of MMP-2, in a reversible manner. Thrombin-stimulated VSMCs invasion was abolished by EGCG and ECG, and reduced by GTE. CONCLUSIONS: GTE inhibits thrombin-induced VSMCs invasion most likely by preventing MMP-2 expression and its activation by a direct inhibition of MT1-MMP. **The ability of green tea to prevent cell invasion and matrix degradation might contribute to its protective effect on atherosclerosis and cancer.**-PMID: 15885676 [PubMed - in process]

**Anticancer Res. 2005 Jan-Feb;25(1A):397-402.-Novel D-ring analog of epigallocatechin-3-gallate inhibits tumor growth and VEGF expression in breast carcinoma cells.-Waleh NS, Chao WR, Bensari A, Zaveri NT.**

Drug Discovery Program, Biosciences Division, SRI International, Menlo Park, CA 94025, USA.

**The cancer chemopreventive activity of green tea and its major polyphenolic constituent, epigallocatechin-3-gallate (EGCG) have been attributed to its antioxidant, antiproliferative and antiangiogenic effects.** Several new molecular targets for EGCG's anticarcinogenic activity have been proposed in the recent literature. However, the understanding of the molecular mechanisms of EGCG's activity in vivo have been confounded by its low oral bioavailability and low plasma levels. Studies of EGCG would be greatly aided by the availability of synthetic analogs of EGCG designed to understand the contributions of the A, B, and D-rings and the phenolic hydroxyl groups of EGCG to its molecular mechanisms of action. We recently reported the de novo synthesis of a D-ring analog of EGCG, with the objective of using such analogs to understand the molecular mechanisms of EGCG action. We report here the first studies with a synthetic D-ring analog of EGCG. We examined the ability of the synthetic D-ring analog to inhibit tumor cell proliferation in breast carcinoma cells. We also investigated the effect of the analog on stress-induced VEGF production in breast carcinoma cells using Northern analysis and quantitative RT-PCR. We report here that the synthetic D-ring analog inhibits breast cancer cell growth in vitro with potencies equivalent to those of EGCG. Our results also show that, like EGCG, the synthetic analog inhibits hypoxia- and serum starvation-induced production of VEGF mRNA in breast cancer cells. Such synthetic analogs are valuable for understanding the structure-function relationship of EGCG and identifying relevant mechanisms of the chemopreventive action of EGCG.-PMID: 15816564 [PubMed - indexed for MEDLINE]

**Arch Latinoam Nutr. 2003 Jun;53(2):111-8.- [The chemo-protector effects of tea and its components]- [Article in Spanish]- Gonzalez de Mejia E.**

Department of Food Science and Human Nutrition, University of Illinois, Urbana-Champaign, USA.

Tea has been consumed worldwide since ancient times to maintain and improve health. Its main active components are a type of polyphenols known as flavonoids, which include catechins and theaflavins. **Several epidemiological studies suggest that the consumption of green tea could prevent cancer development in humans. Likewise, animal studies have shown that green tea consumption may inhibit the development of prostate and breast cancer.** It has been shown that, through several mechanisms, tea polyphenols present antioxidant, and anticarcinogenic activities, thus affording several health benefits. It is important to better characterize tea components, to study their bio-availability and bio-transformation in vivo and to conduct clinical studies of its main active compounds.-PMID: 14528600 [PubMed - indexed for MEDLINE]

**J Nutr. 2002 Aug;132(8):2307-11.-Green tea inhibits vascular endothelial growth factor (VEGF) induction in human breast cancer cells.-Sartippour MR, Shao ZM, Heber D, Beatty P, Zhang L, Liu C, Ellis L, Liu W, Go VL, Brooks MN.**

Department of Surgery, Division of Oncology and. Center for Human Nutrition, University of California, Los Angeles 90095, USA.

**Investigators have shown that green tea and its main catechin epigallocatechin-3 gallate (EGCG) may decrease the risk of cancer.** Our previous study showed that green tea extract (GTE) as well as its individual catechin components inhibited MDA-MB231 breast cancer cell and human umbilical vein endothelial cell (HUVEC) proliferation. Further, GTE suppressed breast cancer xenograft size and decreased the tumor vessel density in vivo. In the current study, we investigated the effect of GTE on the major angiogenic factor vascular endothelial growth factor (VEGF) in an in vitro experiment. GTE or EGCG (40 mg/L) significantly decreased the levels of the VEGF peptide secreted into conditioned media. This occurred in both HUVEC and human breast cancer cells and the effect was dose dependent. Furthermore, GTE and EGCG decreased the RNA levels of VEGF in MDA-MB231 cells. This inhibition occurred at the transcriptional regulation level and was accompanied by a significant decrease in VEGF promoter activity. We also showed that GTE decreased c-fos and c-jun RNA transcripts, suggesting that activator protein (AP)-1-responsive regions present in the human VEGF promoter may be involved in the inhibitory effect of GTE. Furthermore, GTE suppressed the expression of protein kinase C, another VEGF transcription modulator, in breast cancer cells. **Inhibition of VEGF transcription appeared to be one of the molecular mechanism(s) involved in the antiangiogenic effects of green tea, which may contribute to its potential use for breast cancer treatment and/or prevention.-PMID: 12163680 [PubMed - indexed for MEDLINE]**

**Cancer Lett. 2001 Jun 26;167(2):175-82.-Regular consumption of green tea and the risk of breast cancer recurrence: follow-up study from the Hospital-based Epidemiologic Research Program at Aichi Cancer Center (HERPACC), Japan.- Inoue M, Tajima K, Mizutani M, Iwata H, Iwase T, Miura S, Hirose K, Hamajima N, Tominaga S.**

Division of Epidemiology and Prevention, Aichi Cancer Center Research Institute, 1-1 Kanokoden, Chikusa-ku, Nagoya 464-8681, Japan. minoue@aichi-cc.pref.aichi.jp

**Experimental studies suggest various features of anticancer activity of green tea including inhibitory effect of tumor invasion and metastasis. This study was conducted to examine the association between regular green tea consumption prior to diagnosis and subsequent risk of breast cancer recurrence.** The Hospital-based Epidemiologic Research Program at Aichi Cancer Center (HERPACC) was started in 1988, in which information on lifestyle has routinely been collected from all first-visit outpatients by questionnaire. A total of 1160 new surgical cases of female invasive breast cancers with HERPACC information diagnosed between June 1990 and August 1998 were followed up through December 1999, and the risk (hazard ratio: HR) of recurrence was assessed with reference to daily green tea consumption using a Cox proportional hazard model. During 5264 person-years of follow-up, 133 subjects (12%) were documented to suffer recurrence of breast cancer. A decreased HR for recurrence adjusted for stage was observed with consumption of three or more daily cups of green tea (HR=0.69, 95% confidence interval (95%CI)=0.47-1.00). Particularly in stage I, the HR was decreased statistically significantly (HR=0.43, 95%CI=0.22-0.84). A similar tendency was observed for stage II subjects, but was not present among more advanced stages. **Although careful interpretation is needed, these results suggest the possibility that regular green tea consumption may be preventive against recurrence of breast cancer in early stage cases.-PMID: 11369139 [PubMed - indexed for MEDLINE]**

**J Cancer Res Clin Oncol. 1999 Nov;125(11):589-97.-Two stages of cancer prevention with green tea.-Fujiki H.**

Cancer chemoprevention is a new and important medical science in its own right. On the occasion of my presentation entitled "Natural agents and cancer chemoprevention" at the 90th AACR Meeting in 1999, I summarized our recent results on cancer prevention with **green tea**. In this article, the present status of clinical trials supported by the Chemoprevention Branch of the National Cancer Institute in the United States is first described by way of introduction. Although various natural products are now under investigation in phase I

clinical trials, green tea has, perhaps, the greatest potential for further development. In order to expand our understanding of the effects of tea polyphenols and green tea, I review their ability to inhibit growth and cause apoptosis of cancer cells, their distribution into target organs and their other cancer-preventing properties. In addition, the paper focuses on the significance of reducing tumor necrosis factor alpha (TNFalpha) gene expression in cells and TNFalpha release from cells as essential activities for cancer prevention. As for the amounts of green tea effective in cancer prevention, **I present two results from our Research Institute: a prospective cohort study with over 8000 individuals in Saitama Prefecture revealed that the daily consumption of at least ten Japanese-size cups of green tea resulted in delayed cancer onset, and a follow-up study of breast cancer patients conducted at our Hospital found that stages I and II breast cancer patients consuming over five cups per day experienced a lower recurrence rate and longer disease-free period than those consuming fewer than four cups per day.** Thus, I propose here, for the first time, the two-stage approach to analyzing cancer prevention with green tea: cancer prevention before cancer onset and cancer prevention following cancer treatment. As an additional example of cancer prevention with natural agents, kava, a daily beverage in Fiji, is mentioned. **All the evidence reminds us of the significance of alternative medicine in practical cancer prevention.**-PMID: 10541965 [PubMed - indexed for MEDLINE]

**Mutat Res. 1999 Jul 16;428(1-2):339-44.-Green tea and cancer chemoprevention.-Suganuma M, Okabe S, Sueoka N, Sueoka E, Matsuyama S, Imai K, Nakachi K, Fujiki H.-Saitama Cancer Center Research Institute, Ina, Kitaadachi-gun, Saitama 362-0806, Japan.**

Worldwide interest in green tea as a cancer preventive agent for humans has increased, because it is non-toxic and it is effective in a wide range of organs. (-)-Epigallocatechin gallate (EGCG) is the main constituent of green tea; the others are (-)-epicatechin gallate, (-)-epigallocatechin and (-)-epicatechin (EC). This paper reports the results of our latest pharmacological and biochemical studies with 3H-EGCG, along with studies on human subjects. The study on bioavailability of 3H-EGCG in mice revealed the wide distribution of radioactivity in multiple organs. Specifically, radioactivity was found in all reported target organs of EGCG and green tea extract (digestive tract, liver, lung, pancreas, mammary gland and skin) as well as other organs (brain, kidney, uterus and ovary or testes) in mice. Recently, we demonstrated that EC enhanced incorporation of 3H-EGCG into human lung cancer cell line PC-9 cells. EC along with another cancer preventive agent sulindac also synergistically enhanced apoptosis in PC-9 cells induced by EGCG. **Moreover, a case-control study on breast cancer patients revealed that high daily consumption of green tea was associated with a lower recurrence rate among Stages I and II patients. All the results suggest that consumption of green tea is a practical and effective cancer preventive both before cancer onset and after cancer treatment.**-PMID: 10518005 [PubMed - indexed for MEDLINE]

## Arabinogalactan

### **Introduction**

Larch arabinogalactan is a polysaccharide powder derived from the wood of the larch tree (*Larix* species) and comprised of approximately 98 percent arabinogalactan. Arabinogalactans are found in a variety of plants but are more abundant in the *Larix* genus, primarily *Larix occidentalis* (Western Larch). The Western Larch is unique among pines in that it loses its needles in the fall. Western Larch is also known as Mountain Larch or Western Tamarack and is native to the Pacific and Inland Northwest United States as well as parts of British Columbia, Canada.<sup>1</sup> Larch arabinogalactan is approved by the U.S. Food and Drug Administration (FDA) as a source of dietary fiber, but also has potential therapeutic benefits as an immune stimulating agent and cancer protocol adjunct.

### **Description and Biochemistry**

Pharmaceutical-grade larch **arabinogalactan** is a fine, dry, off-white powder with a slightly sweet taste and mild pine-like odor. It dissolves completely in water or juice, is low in viscosity and therefore easy to administer, even to children. It is composed of galactose and arabinose molecules in a 6:1 ratio, with a small amount of glucuronic acid. Arabinogalactans are long, densely branched polysaccharides of varying molecular weights (10,000-120,000). **Lower molecular weight polysaccharides typically exhibit an anti-inflammatory, anti-complement, anti-allergy effect, while those of higher weights stimulate natural killer (NK) cell**

**cytotoxicity and reticuloendothelial cells.** In the case of larch arabinogalactan, molecular weights of the two major fractions are 16,000 and 100,000, perhaps accounting for its wide range of therapeutic properties.<sup>2</sup>

## Pharmacokinetics

Human studies on the pharmacokinetics of larch arabinogalactan are few and the amount absorbed following an oral dose remains unclear. Animal studies indicate that intravenous injection of purified larch arabinogalactan results in 52.5 percent of the dose being present in the liver and 30 percent in the urine 90 minutes after dosing. Hepatic clearance occurred with a half-life of 3.42 days.<sup>3</sup> Non-absorbed larch arabinogalactan is actively fermented by intestinal microflora and is particularly effective at increasing beneficial anaerobes such as Bifidobacteria and Lactobacillus.<sup>4</sup>

## Clinical Indications

**Dietary Fiber: Larch arabinogalactan is an excellent source of dietary fiber that is able to increase short-chain fatty acid production (primarily butyrate) via its vigorous fermentation by intestinal microflora.**<sup>2</sup> It is well documented that butyrate is essential for proper colon health as it is the preferred substrate for energy generation by colonic epithelial cells.<sup>5</sup> Butyrate also acts as a protectant for the intestinal mucosa against disease and cancer-promoting agents.<sup>6</sup> Arabinogalactan added to human fecal homogenates has also been shown to decrease ammonia generation, and therefore may be of clinical value in the treatment of portal-systemic encephalopathy, a disease characterized by ammonia build-up in the liver.<sup>4</sup> Larch arabinogalactan given to human subjects increased levels of beneficial intestinal anaerobes, particularly Bifidobacterium longum, via their fermentation specificity for arabinogalactan compared to other complex carbohydrates.<sup>7,8</sup>

**Cancer Protocols: Larch arabinogalactan may be an effective adjunct to cancer therapies due to its ability to stimulate NK cell cytotoxicity, stimulate the immune system, and block metastasis of tumor cells to the liver.**<sup>2</sup> Tumor metastasis to the liver is more common than to other organ sites, probably due to tumor cell specificity for lectin-like receptor sites found in liver parenchyma. Animal studies have demonstrated arabinogalactan's ability to inhibit or block lectin receptor sites, thereby reducing tumor cell colonization of the liver and also increasing survival time of the subjects.<sup>9-11</sup> Pretreatment with larch arabinogalactan was found to stimulate NK cell cytotoxicity via potentiation of the cytokine network, primarily via an increase in the release of gamma interferon.<sup>12</sup>

**Pediatric Otitis:** Media Recurrent otitis media is common in pediatric populations and it appears that improving immune system function might lead to a decrease in both frequency and severity of this condition. **Research has demonstrated larch and other arabinogalactans to be capable of enhancing the immune response to bacterial infection via stimulation of phagocytosis, competitive binding of bacterial fimbriae, or bacterial opsonization.** This was found to be particularly true for infection by gram negative organisms such as Escherichia coli and Klebsiella species.<sup>2,13</sup> In addition, D'Adamo reports a decrease in occurrence and severity of otitis media in pediatric patients supplemented prophylactically with larch arabinogalactan.<sup>2</sup> Larch arabinogalactan's mild taste and excellent solubility in water and juice make it a relatively easy therapeutic tool to employ in pediatric populations.

**Chronic Disease:** A number of chronic diseases are characterized by decreased NK cell activity, including chronic fatigue syndrome,<sup>14</sup> viral hepatitis,<sup>15,16</sup> HIV/AIDS,<sup>2</sup> and autoimmune diseases such as multiple sclerosis.<sup>17</sup> Stimulation of NK cell activity by larch arabinogalactan has been associated with recovery in certain cases of chronic fatigue syndrome.<sup>18</sup> Viral hepatitis (hepatitis B and C) is also characterized by a decrease in NK cell cytotoxicity<sup>15,16</sup> and therefore these patients may benefit from its stimulation by larch arabinogalactan. In the case of multiple sclerosis, a small 2-year study of patients with the relapsing/remitting type concluded that disease severity was correlated with NK cell functional activity, supporting the hypothesis that NK cells play a role in the immunopathogenesis of this disease.<sup>17</sup> Consequently, stimulation of NK cell cytotoxicity might be of clinical benefit to these patients. Patients with HIV/AIDS develop low CD4 cell counts and often are plagued by opportunistic infections. By virtue of its immune-stimulating properties, larch arabinogalactan has been shown to effect a slight increase in CD4 cell counts, in addition to decreasing susceptibility to opportunistic pathogens.<sup>2</sup>

**Hepatic Drug Delivery:** Hepatic uptake of an injected dose of larch arabinogalactan resulted in 52.5 percent of the dose arriving in the liver. Due to its high hepatic concentration and its ability to increase vascular

permeability,<sup>19</sup> larch arabinogalactan has been suggested as a vehicle for administering diagnostic or therapeutic agents to the liver.<sup>3</sup>

**Platelet Washing Medium:** Larch arabinogalactan solution has been studied as a medium for use in platelet washing; a technique employed to separate platelets from platelet-rich plasma. The washed platelets can then be used in transfusions, bioassays, and research. Platelets washed with larch arabinogalactan solution were free of plasma proteins and retained both normal morphology and function.<sup>20</sup>

**Side-Effects and Toxicity:** Larch arabinogalactan is a safe and effective immune-stimulating phytochemical. It is FDA-approved for use as a dietary fiber and in food applications. Both acute and long-term toxicity studies in rats and mice reveal no evidence of toxicity.<sup>21</sup> Human consumption is usually without side-effects; however, a small percentage of people (<3%) experienced bloating and flatulence, possibly due to the vigorous fermentation of the arabinogalactan by intestinal microflora.<sup>2</sup> Because of its excellent safety profile and solubility in water and juice, larch arabinogalactan is considered a safe, effective immune-stimulating agent for pediatric use.

## Dosage

Larch arabinogalactan in powder form is typically dosed in teaspoons or tablespoons at a concentration of approximately 4-5 grams per tablespoon. The typical adult dosage is one to three tablespoons per day in divided doses; the pediatric dose is one to three teaspoons per day. The powder is usually mixed with water or juice but can be added to food if desired.

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### Trace Minerals

**Vet Clin North Am Small Anim Pract. 2004 Jan;34(1):249-69, viii.-The use of nutraceuticals in cancer therapy.- Roudebush P, Davenport DJ, Novotny BJ.**

Technical Information Services, Hill's Pet Nutrition, Inc. Hill's Science and Technology Center, PO Box 1658, Topeka, KS 66601, USA. phil\_roudebush@hillspet.com

The high prevalence of nutraceutical use among human patients with cancer suggests that the use of nutraceuticals in pet animals with cancer is probably common. Dogs with a wide variety of malignant diseases have significant alterations in carbohydrate, protein, and fat metabolism. These metabolic alterations may be ameliorated by using functional foods relatively low in soluble carbohydrate, moderate amounts of protein that includes sources of arginine, and moderate amounts of fat supplemented with omega-3 long-chain polyunsaturated fatty acids. Well-controlled clinical studies in a variety of species with cancer, including rodents, people, and dogs, have documented that increased dietary and serum levels of omega-3 fatty acids are associated with a number of health benefits, including improved disease-free interval, survival time, and quality of life. **Other nutraceuticals of interest in patients with cancer include antioxidant vitamins, trace minerals, glutamine, protease inhibitors, garlic, tea polyphenols, vitamin A, and shark cartilage.**-Publication Types: •Review  
Review, Tutorial-PMID: 15032131 [PubMed - indexed for MEDLINE]

**J Am Coll Nutr. 1998 Jun;17(3):244-9.-Effects of supplementation with a combination of antioxidant vitamins and trace elements, at nutritional doses, on biochemical indicators and markers of the antioxidant system in adult subjects.-Preziosi P, Galan P, Herbeth B, Valeix P, Roussel AM, Malvy D, Paul-Dauphin A, Arnaud J, Richard MJ, Briancon S, Favier A, Hercberg S.**

Institut Scientifique et Technique de la Nutrition et l'Alimentation, Conservatoire National des Arts et Metiers, Paris, France.

**OBJECTIVE:** To test the impact of supplementation with nutritional doses of antioxidant nutrients on biochemical indicators of vitamin and trace element levels. **DESIGN:** A randomized double-blind trial was performed comparing two groups receiving daily either a combination of vitamins (beta-carotene, 6 mg; vitamin C, 120 mg; and vitamin E, 30 mg) and trace elements (zinc, 20 mg; and selenium, 100 micrograms); or a placebo. **SUBJECTS:** 401 subjects (166 males aged 45 to 60 years and 235 females aged to 35 to 60 years). **MEASURE OF OUTCOME:** Biological markers of vitamin and trace element status and free radical parameters were measured initially, 3 months, and 6 months after supplementation. **RESULTS:** Mean serum concentrations of alpha-tocopherol, vitamin C, beta-carotene, zinc and selenium increased significantly after 3 months of supplementation in the group receiving multivitamins associated with minerals. At baseline, 18.2% of the men and 5.1% of the women had low concentrations of serum vitamin C (< 20 mumol/l); 2.4% of the men and 17% of the women presented low concentrations of serum retinol (< 1.4 mumol/l); 18.7% of men and 10% of women had serum beta-carotene < 0.30 mumol/l. None of the study subjects had serum alpha-tocopherol concentrations below the limit cut-off point (< 9.3 mumol/l). Low serum zinc concentrations (< 10.7 mumol/l) were found in 15.1% of men and 23.8% of women. Low serum selenium concentrations (< 0.75 mumol/l) were found in 6% of men and 6.4% of women. A significant increase in plasma and red cell GPx activity was observed in groups receiving supplementation. No modifications were observed after 6 months of supplementation for malondyaldehyde. **CONCLUSION: This study demonstrates the efficacy of an intake of antioxidant vitamins and trace elements, given at nutritional doses, on biochemical indicators of vitamin and trace elements status.**-Publication Types: • Clinical Trial • Randomized Controlled Trial-PMID: 9627910

[PubMed - indexed for MEDLINE]

**Support Care Cancer. 1993 Nov;1(6):295-7.-Critical reappraisal of vitamins and trace minerals in nutritional support of cancer patients.- Stahelin HB.-Geriatric University Clinic, Kantonsspital, Basel, Switzerland.**

The potential of a high intake of fresh fruits and vegetables in cancer prevention is well established. **Epidemiological studies support carotene, vitamins A, C, E and selenium as the active compounds.** Antioxidant properties and direct effects (e.g. inhibition of N-nitrosamine formation or cell-to-cell interactions) are invoked. **The role of other trace elements is less clear. The modulation of immune function by vitamins and trace elements remains important and affects survival.** In established cancers, the site-specific differences in the diet/cancer relation require appropriate dietary changes, e.g. low fat (20% by energy) in breast cancer, or high vegetable or fruit intake in lung cancer. Single high-dose supplements (e.g. Vitamin C) have proved to have no curative or life-prolonging effect. **Chemotherapy and radiation increase the requirements for antioxidant compounds. Supplementation can diminish the damage induced by peroxidation.** Carefully planned and monitored trials that establish the optimal intake of micronutrients as adjuvants in cancer patients are required.-Publication Types:• Review• Review, Tutorial-PMID: 8156246 [PubMed - indexed for MEDLINE]

**Cancer. 1985 Jan 1;55(1 Suppl):295-300.-Micronutrient requirements of cancer patients.-Hoffman FA.**

Several major factors may influence the micronutrient requirements of the patient with cancer. These factors include the metabolic state of the malignancy and its effects on host metabolism, the catabolic effects of antineoplastic therapy, and other physiologic stresses commonly associated with the treatment of cancer, i.e., surgery, fever and infection. Although the nutritional importance of vitamins, minerals, and trace elements is recognized, the optimal daily dose that will preserve lean body mass without enhancing tumor growth is not known. Recommended Dietary Allowances (RDAs), where established, are based on populations with nonmalignant diseases. **However, supplementation with vitamins, minerals, and certain trace elements is recommended for the cancer patient who requires prolonged parenteral support, since clinically relevant deficiency states have been described. The effect of malignancy on the metabolism of several of these micronutrients (iron, ascorbic acid, alpha tocopherol, selenium, zinc, copper) is discussed.**-PMID: 3917362 [PubMed - indexed for MEDLINE]

I use the Trace minerals from **Youngevity**. You can find them at <http://www.GetHealthyNow.us>.

After reading the following two articles I cannot stress enough the importance of eating anti-inflammatory foods. I know with today's lifestyles it may be difficult to eat the right foods all the time that is why I like the convenience of the **Ganoderma Lucidum and Excellium products by Gano Excel**. **I'll talk more about these later on.**

I included these next two articles, because I want to bring to your attention the potential dangers of inflammation.

### **Inflammation – The Root of All Illness?**

**Roman Bystrianyuk, "Inflammation – The Root of All Illness?", Health Sentinel, July 27, 2005,**

Inflammation is an integral part of the immune system. We're all familiar with inflammation. When you're cut it becomes red and swollen as a response by the immune system and as the cut heals the inflammation dies down. A similar underlying, chronic, low-grade inflammation is now being considered by more and more scientists as a major cause of diseases not only for obvious diseases like arthritis and asthma, but also for heart disease, diabetes, Alzheimer's, and even cancer. A recent special edition of Newsweek examines this quiet hazard.

Years ago oxidation was being considered as the main culprit in many diseases. Now oxidation is grabbing more of the attention. According to neuroscientist James Joseph of Tufts University, **"Inflammation is the evil twin of oxidation.** Where you find one, you find the other." This discovery is solving "medical puzzles" such as people with high blood pressure have an increased risk for Alzheimer's or why people with rheumatoid arthritis have higher rates of sudden cardiac death. All these conditions are tied with a connecting thread of inflammation. When your cut heals the inflammation recedes, but constant exposure to cigarette smoke, excess cholesterol, and

low-grade infections can contribute to a low-grade, chronic inflammation. The inflammation simmers like, “a low flame on the back burner that we’re unaware of until the pot burns.”

Diabetes has emerged as a recent example. The connection between type II diabetes and obesity are so well known that some researchers consider the two combined into a single disease of “diabesity”. According to the article, “When you gain weight, fat cells grow more biochemically active, churning out inflammatory compounds. As obesity ratchets up inflammation, inflammation in turn promotes insulin resistance, a central feature of diabetes and the so-called metabolic syndrome that precedes it.”

Like diabetes, heart disease is linked with obesity. According to Dr. Peter Libby, chief of cardiovascular medicine at Brigham and Women’s Hospital in Boston, **“Inflammation is the alpha and omega of atherosclerosis. It’s there at every step of the process.”** In the process plaque formation starts when cholesterol sticks to the artery walls and oxidizes. This triggers an immune response that attempts to clean up the problem. The inflammatory response is the body’s attempt to heal, but encourages the formation of larger plaques that can eventually block the artery and result in a heart attack or stroke.

**Certain cancers are also being linked to inflammation.** According to Lisa Coussens, a cancer biologist at the University of California in San Francisco, **“people with chronic inflammatory bowel diseases have tremendously enhanced risk of colon cancer.”** Some triggers of inflammation include, “cigarette smoke in the lungs, persistent infections like hepatitis C in the liver and chronic heartburn, which repeatedly irritates the lining of the esophagus with gastric acid.” The result includes oxidative damage to the DNA which sometimes cripples the suicide mechanism of the cell that would often allow abnormal cells to self-destruct.

Although anti-inflammatory medications seem like an obvious answer they are fraught with problems. Inflammatory chemicals also serve important functions in the body and stopping their action may have a positive effect such as decreasing pain, but they can also have serious negative impacts. Vioxx is an example where inhibiting the COX-2 inflammatory enzyme relieved pain, but also impeded the process to prevent blood clots from forming in the arteries. Dr David Graham, an employee of the Food and Drugs Administration, estimated that up to 139,000 Americans have died or have been seriously injured as a result of taking Vioxx.

**Even standard arthritis medications called NSAIDs have serious consequences.** According to a June 1999 New England Journal of Medicine each year over 16,000 people die from gastrointestinal bleeding because of the unintended interference in the body’s healing mechanism of the digestive tract. According the journal, **“It has been estimated conservatively that 16,500 NSAID-related deaths occur among patients with rheumatoid arthritis or osteoarthritis every year in the United States.** This figure is similar to the number of deaths from the acquired immunodeficiency syndrome and considerably greater than the number of deaths from multiple myeloma, asthma, cervical cancer, or Hodgkin’s disease. If deaths from gastrointestinal toxic effects from NSAIDs were tabulated separately in the National Vital Statistics reports, these effects would constitute the 15th most common cause of death in the United States.”

While drugs block a single target molecule greatly reducing its activity, natural anti-inflammatories have a wide-ranging, gentler action. According to Greg Cole a professor of medicine and neurology at UCLA, “you’ll get a greater safety and efficacy reducing five inflammatory mediators by 30 percent than by reducing one by 100 percent.”

Aside from avoiding the promoters of inflammation, such as cigarette smoke, there are approaches that can be used to turn down the heat on inflammation. Exercise and decreasing weight help reduce inflammation in the fat and liver cells. A diet rich in vegetables, fruits, whole grains, and omega-3 fatty acids also turns down inflammation.

The omega-3 fatty acids have been shown in dozens of studies to help prevent heart attacks by “preventing arrhythmias, making blood less likely to clot in the arteries, improving the balance of good and bad cholesterol and limiting inflammation.” **The omega-3s are found in coldwater fish such as salmon, sardines, and mackerel as well as walnuts, flaxseeds, and dark leafy greens.**

**A diet rich in fruits and vegetables also helps.** One anti-inflammatory compound that has been extensively studied is curcumin. Curcumin is the yellow pigment in the spice turmeric. Professor Cole has found that small doses of Curcumin reduce a number of inflammatory markers such as TNF-alpha (Tumor Necrosis Factor alpha) and IL-1 (Interlukin-1).

The article concludes, "The beauty of these lifestyle changes is that they're so low tech, affordable and effective. We may all have it within our grasp to reduce inflammation – if we can just muster the willpower." **SOURCE: Newsweek Special Edition, Summer 2005**

The following is an excerpt from **Oncology Vol 16, No 2 (February 2002) Chronic Inflammation and Cancer**. If you would like to read the entire article you can go to: <http://www.cancernetwork.com/journals/oncology/o0202d.htm>

**Emily Shacter, PhD**

*Senior Investigator, Laboratory of Immunology, Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland*

**Sigmund A. Weitzman, MD**

*Professor, Department of Medicine, Section of Hematology/Oncology, Northwestern University Medical School, Chicago, Illinois*

*Introduction*

*Inflammatory Conditions That Predispose to Cancer*

*General Mechanisms of Proneoplastic Activity*

*Proneoplastic Inflammatory Mediators*

*Treatment and Prevention*

*References*

*Reviewers' comments:*

*Krystyna Frenkel, PhD, New York University School of Medicine, New York, New York*

*Alan B. Weitberg, MD, Brown University Medical School, Providence, Rhode Island; Boston University School of Medicine, Boston, Massachusetts*

**A substantial body of evidence supports the conclusion that chronic inflammation can predispose an individual to cancer, as demonstrated by the association between chronic inflammatory bowel diseases and the increased risk of colon carcinoma. Chronic inflammation is caused by a variety of factors, including bacterial, viral, and parasitic infections, chemical irritants, and nondigestible particles. The longer the inflammation persists, the higher the risk of associated carcinogenesis. This review describes some of the underlying causes of the association between chronic inflammation and cancer. Inflammatory mediators contribute to neoplasia by inducing proneoplastic mutations, adaptive responses, resistance to apoptosis, and environmental changes such as stimulation of angiogenesis. All these changes confer a survival advantage to a susceptible cell. In this article, we discuss the contribution of reactive oxygen and nitrogen intermediates, prostaglandins, and inflammatory cytokines to carcinogenesis. A thorough understanding of the molecular basis of inflammation-associated neoplasia and progression can lead to novel approaches to the prevention and treatment of cancer. [ONCOLOGY 16:217-232, 2002]**

**Chronic inflammation may be a causative factor in a variety of cancers. In general, the longer the inflammation persists, the higher the risk of cancer. Hence, acute inflammation, such as occurs in response to a transient infection, is not regarded as a risk factor for the development of neoplasia, although many of the same molecular mediators are generated in both acute and chronic inflammation. In general, inflammatory leukocytes such as neutrophils, monocytes, macrophages, and eosinophils provide the soluble factors that are thought to mediate the development of inflammation-associated cancer, although other cells, including the cancer cells themselves, also participate.**

**Inflammatory mediators include metabolites of arachidonic acid, cytokines, chemokines, and free radicals. Chronic exposure to these mediators leads to increased cell proliferation, mutagenesis, oncogene activation, and angiogenesis. The ultimate result is the proliferation of cells that have lost normal growth control. Animal models provide experimental evidence that chronic inflammation can promote cancer and further insights into possible mechanisms.**

This review will summarize the clinical association between chronic inflammation and cancer and will describe the

inflammatory factors and pathways that are thought to be proneoplastic. Emphasis will be placed on examining the role of the reactive oxygen and nitrogen intermediates, cytokines, and prostaglandins.

Now that you know how damaging inflammation can be I urge you to do your best to include natural anti-inflammatory foods, Trace Minerals, Mangosteen, and Aloe Vera in your diet.

### Calcium D-Glucarate

I have been hearing a lot of good things about Calcium D-Glucarate so I decided to investigate. Here is some of the science that I found.

Integr Cancer Ther. 2003 Jun;2(2):139-44. -Detoxifying cancer causing agents to prevent cancer.- Hanausek M, Walaszek Z, Slaga TJ.

AMC Cancer Research Center, Denver, CO 80214, USA. hanausekm@amc.org

Different vitamins and other micronutrients in vegetables, fruits, and other natural plant products may prevent cancer development (carcinogenesis) by interfering with detrimental actions of mutagens, carcinogens, and tumor promoters. The goal of current studies in cancer prevention is to determine the mechanisms of synergistic action of the natural source compounds known to inhibit one or more stages of carcinogenesis, that is, initiation and promotion/progression. Many natural cancer preventive agents are effective inhibitors of tumor initiation, promotion, and/or progression. The mechanism of action is related to their abilities to prevent critical carcinogen metabolism and to increase detoxification of carcinogens and tumor promoters. The authors review here the potential role of the detoxification system and, in particular, the roles of D-glucaric acid, and the enzyme beta-glucuronidase in early detection and prevention of cancer. There is now growing evidence for the possible control of different stages of the cancer induction by inhibiting beta-glucuronidase with D-glucaric acid derivatives, especially with its salts (D-glucarates). D-Glucaric acid has been found in many vegetables and fruits. **Therefore, the consumption of fruits and vegetables naturally rich in D-glucaric acid or self-medication with D-glucaric acid derivatives such as calcium D-glucarate offers a promising cancer prevention approach.**-Publication Types:\* Review\* Review, Tutorial-PMID: 15035900 [PubMed - indexed for MEDLINE]

Cancer Detect Prev. 1997;21(2):178-90. - Metabolism, uptake, and excretion of a D-glucaric acid salt and its potential use in cancer prevention.-Walaszek Z, Szemraj J, Narog M, Adams AK, Kilgore J, Sherman U, Hanausek M.

University of Texas M. D. Anderson Cancer Center, Science Park-Research Division, Smithville, USA.

D-Glucaric acid (GA) is a nontoxic, natural compound. One of its derivatives is the potent beta-glucuronidase inhibitor D-glucaro-1,4-lactone (1,4-GL). The goal of this study was to demonstrate the in vivo formation of 1,4-GL from a D-glucarate salt and determine its metabolism, uptake by selected organs, and excretion following oral administration of potassium hydrogen D-[14C]glucarate to male and female Sprague-Dawley rats. 1,4-GL increases detoxification of carcinogens and tumor promoters/progressors by inhibiting beta-glucuronidase and preventing hydrolysis of their glucuronides. 1,4-GL and its precursors, such as potassium hydrogen D-glucarate and calcium D-glucarate, may exert their anticancer action, in part, through alterations in steroidogenesis accompanied by changes in the hormonal environment and the proliferative status of the target organ. Thus, GA derivatives may be useful as new or adjuvant cancer preventive and therapeutic agents. In our study, 1,4-GL was found to be formed from the D-glucarate salt in the stomach of rats. It was apparently absorbed from the gastrointestinal tract, transported with the blood to different internal organs, and excreted in the urine and to a lesser extent in bile. There were no significant differences in the metabolism of PHG between male and female rats. **Thus, formation of 1,4-GL from D-glucaric acid derivatives may be prerequisite for their inhibition of chemical carcinogenesis in rodents and prevention of breast, prostate, and colon cancer in humans.**PMID: 9101079 [PubMed - indexed for MEDLINE]

Here is an article by Stewart A. Lonky, MD on Calcium D-Glucarate. After reviewing the science on Calcium D-Glucarate I decided it would be easier to include Dr. Lonky's article.

## Calcium D-Glucarate

The following is a current review of information concerning D-Glucarate. By Stewart A. Lonky, MD, FACP

Much of the stimulus for this work came from the observation that populations who had diets very rich in fruits and vegetables had a lower incidence of cancer. The outcome of this work was the isolation of D-Glucarate from fruits and vegetables. This "purification" and use of D-Glucarate is patented.

In 1986 Walaszek and co-workers demonstrated that taking D-Glucarate orally, in animals and humans, leads to a slow release of a substance that inhibits glucuronidase. Glucuronidase is an enzyme that thwarts the body's efforts to rid itself of cancer causing substances known as carcinogens. Walaszek demonstrated that if you feed animals Glucarate, there is an increase in the level of a substance known as D-Glucaro-lactone, which inhibits glucuronidase. He looked at a model for breast cancer induction in rats, the animal used most frequently for breast cancer research. Rats given anthracene develop breast cancer, but if they were pre-treated with dietary Glucarate, tumor development was blocked in over 70% of the animals. It was shown that when D-Glucarate was fed to the animals, the levels of estradiol (the form of estrogen that causes breast cancer) were decreased in the blood. In summery, D-Glucarate lowers the level of glucuronidase, and in so doing allows the body to eliminate harmful carcinogens (cancer causing chemicals).

In 1986 these same researchers found that by giving the "active" agent, D-Glucaro-lactone by mouth favored the reduction of glucuronidase activity for one hour, using the Calcium D-Glucarate salt led to a 5-hour effect. These experiments were performed in animals fed various carcinogens and the level of free carcinogen or carcinogen bound to DNA was measured in the blood. With calcium D-Glucarate, these levels were drastically reduced over a sustained period of time. There was a direct correlation between the decrease in DNA binding of carcinogen and the ability to induce tumor formation. In essence, D-Glucarate administration favors the elimination of carcinogens in the stool, and the effect lasts for hours after a single low dose.

In 1990 Walaszek moved to the MD Anderson Carcinogenesis center at Houston. He published an article showing that Calcium D-Glucarate leads to a decrease in the "proliferation" of tumors themselves, in other words, once present this agent can decrease their growth.

In 1991, 1992, and 1993 there were a number of articles that tested D-Glucarate in human tumor cell cultures. In these studies Glucarate was added to derivatives of retinoic acid (a compound from vitamin A). Results demonstrated that the addition of D-Glucarate led to an increase in the anti-tumor activity of retinoids.

In 1994 Walaszek and co-workers demonstrated that in certain human tumor cell culture lines, D-Glucarate was a potent anti-proliferative agent when used alone, without retinoic acid. There was an inability to stimulate tumor cell growth by the usual means when the tissue cultures were treated with D-Glucarate.

In 1995 Walaszek and co-workers demonstrated that feeding D-Glucarate to animals was always followed by conversion to the D-Glucaro-lactone product, and that this conversion led to an increase in the blood levels of this compound. In these studies a number of different carcinogens were used to try and induce breast cancer in rats. Although these carcinogens led to breast cancer in rats fed a placebo, those fed Glucarate did not develop breast cancer. The main carcinogen used in these studies was N-methyl-N-nitrosurea.

Work by other investigators, including Walaszek, in 1995 and 1996 showed that Calcium D-Glucarate and the Potassium hydrogen D-Glucarate were both excellent inhibitors of colon cancer in experimental animal models.

The most recent work on specific tumors has shown that the absorption, metabolism, and effectiveness of D-Glucarate was similar in both male and female animals. There is tumor inhibition shown for breast, prostate, lung, and colon cancer, and the mechanism of action is identical in each...there is a decrease in glucuronidase activity, a decrease in carcinogen level (because the body eliminates the carcinogen) and a decrease in tumorogenesis.

**In summary, D-Glucarate is a naturally occurring substance that is not present in sufficient amounts to counteract natural and external carcinogens.** By supplementing D-Glucarate as the calcium salt, we can get a long lasting effect of Glucarate, and this effect is to favor the body's natural defense mechanism for

eliminating carcinogens. Without Glucarate, the body cannot efficiently eliminate these cancer-causing agents because of the interference from glucuronidase. By supplementing the diet with Glucarate, we can block glucuronidase activity and the body can rid itself of the carcinogens, thus preventing many forms of cancer, including lung, breast, prostate, and colon-Stewart A. Lonky, MD, FACP

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You can eat foods high in glucaric acid (a form of calcium D-glucarate) such as **apples, brussels sprouts, broccoli, cabbage, and bean sprouts**. Or you could take a Calcium D-Glucarate supplement. You can go to your local health food store and ask for Calcium D-Glucarate or even search the web. Just type in the words Calcium D-Glucarate.

## Fulvic Acid

While searching the Internet for products that you should know about regarding your health and cancer I came across this information regarding Fulvic Acid.

U.S. Senate Document 264, as well as the 1992 Earth Summit statistics, indicates that the mineral content of the world's farm and range soil has decreased dramatically. Over the last 100 years, the depletion of essential mineral nutrients in the soil in North America is estimated to average 85%, with some US farms depleted by 100%. This means that in most cases we are getting as little as 15% of the minerals and nutrients that were once readily available in our food sources -- sometimes less. These statistics show that the American soils are so depleted of their natural resources that they no longer provide plant foods with the mineral elements essential to human nourishment and health!

The natural extract from years of accumulated plant deposit and from water running through the humic deposit enters the plants through the root system. These humic substances affect the soil and consequently plant growth and quality. Also, as a result of pesticide and herbicide usage and the mineral and nutrient depletion, most of the microbial life in the soil is gone. Without the microbes necessary for plants to convert inorganic substances to organic, the plants become deficient in minerals and nutrients.

One of the organic minerals that has been greatly diminished through the years is fulvic acid (not to be confused with folic acid). With less fulvic acid produced, the plants themselves will take up less minerals and nutrients. The deficiency of fulvic acid may be the most critical factor missing in our diets today. Fulvic acids are vital in delivering substantial amounts of nutrients and minerals and their energies to the living cells.

One of the functions of fulvic acid is to balance and energize all cell life and biological properties it comes in contact with. In addition to the diminished nutritional value of our food, and because the cell walls get stiffer and thicker with age, they cannot get as much vital nutrients and oxygen as they once did. Fulvic acid is reported to relieve oxygen deficiency and increase the vital activity of cells. New energy will be gained just by providing your stressed out cells with the nutrients and oxygen needed.

Also, if you can restore individual cells to their normal chemical balance and electrical potential, then you have given those cells life and the potential to function at peak performance. Fulvic acid has been reported to "induce revitalization" to the cells. Flooding nutrients into your cells gives new vitality and energizes the entire body.

When fulvic acid acts upon a substance, its molecular size and weight are altered. This reportedly enables it to pass through cell membranes. Fulvic makes cell walls more permeable, so nutrients can more easily enter the cell, as well as allowing waste to leave the cells more readily.

One of the strongest advantages of fulvic minerals is the belief that the absorption greatly exceeds traditional tablet supplements. As with any nutrient or supplement, the only way your body can benefit is if it is absorbed. Fulvic is believed to enhance this process. It also may intensify the metabolism of proteins and is thought to increase the body's ability to go after viruses, pathogens, and bacterial infections of all kinds. It therefore not only bolsters immunity, it stimulates and helps to regulate the immune system.

We know that certain diseases are not caused by outside invaders, but by the immune system's defense mechanisms attacking the body itself. Fulvic acid is thought to have the unique ability to selectively suppress or inhibit certain immune responses, while at the same time naturally increasing the body's immune response where necessary. This ability to selectively control, stimulate, and regulate the immune system is one of the reasons fulvic acid is being studied with such enthusiasm.

In addition to carrying essential nutrients to the cell, it has been shown that fulvic acid may be an excellent natural chelator of toxins and can reduce them to a harmless state. Fulvic acid is effective at neutralizing and detoxifying a wide range of toxic materials, heavy metals and other pollutants. It is essential to wash away the waste and toxins that cells produce.

Harmful free radicals are known to circulate throughout the body, injuring tissue, altering genes, disrupting crucial processes in the body, forming cell mutations and making cells susceptible to infections and diseases. Free radicals are a major contributing factor to nearly all situations of non-ideal health.

Fulvic acid is believed to bond to these free radicals, transforming them into organic, usable substances, or if the cell is too damaged, it is eliminated as waste.

All cells have electrical potential, when the electrical potential of a cell is reduced, progressive weakness and illness may occur. A person's electrical potential may be lowered by loss of blood or fluids, overwhelming emotional stress, accidents, lack of sleep, surgical shock, lingering infections, fatigue or an unbalanced diet. Cells disintegrate when their electrical potential is reduced to zero.

Scientists theorize that electrical and chemical balances at the cellular level can be created and controlled by electrolytes (substances that are soluble in water and are capable of conducting electrical current). Fulvic acid has been shown to be one of nature's most powerful organic electrolytes.>

Organic fulvic acid electrolytes charge, recharge, and restore the potential that is or once was normal to the cell, and in doing so, balances and supercharges cellular life. The fulvic acid electrolytes are thought to greatly increase the percentage rate of absorption through the digestive system of minerals, nutrients, vitamins, herbs and amino acids into the circulatory system.

In addition, fulvic acid is considered by many to be one of the safest and most powerful antiviral substances known. Although not an antibiotic in the technical sense, they provide an antibiotic-effect. A generally accepted benefit of fulvic acid supplementation is that it can be used indefinitely without fear of creating antibiotic resistant strains of disease.

When combining fulvic acid with nutritional supplements, you get the benefits of improved synergistic reactions that you cannot get by taking the ingredients individually.

As unfair as it may seem, you cannot expect to live a sedentary lifestyle, eat fast food, consume gallons of caffeinated drinks, go without exercise, and be in optimal health just by adding a dietary supplement. You must do all you can to help and support your natural body processes. Providing your system with necessary nutrients through supplementation is a wise step, but you must also eat healthy, balanced meals, get at least moderate exercise and plenty of rest, and drink beverages that hydrate your body.

Take control of your health today. A healthy lifestyle can transform your life in ways you and your family may really appreciate for years to come.

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### **Morinda citrifolia (Noni)**

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**Anti-inflammatory and Potential Cancer Chemopreventive Constituents of the Fruits of Morinda citrifolia (Noni).-Akihisa T, Matsumoto K, Tokuda H, Yasukawa K, Seino KI, Nakamoto K, Kuninaga H, Suzuki T, Kimura Y.**

**College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan, Department of Biochemistry and Molecular Biology, Kyoto Prefectural University of Medicine, Kamigyo-ku, Kyoto 602-0841, Japan, College of Pharmacy, Nihon University, 7-7-1 Narashinodai, Funabashi-shi, Chiba 274-8555, Japan, and Nakazen Company Ltd., 1190 Chinen, Shimajiri-gun, Okinawa 901-1513, Japan.**

A new anthraquinone, 1,5,15-tri-O-methylmorindol (1), and two new saccharide fatty acid esters, 2-O-(beta-d-glucopyranosyl)-1-O-hexanoyl-beta-d-glucopyranose (4) and 2-O-(beta-d-glucopyranosyl)-1-O-octanoyl-beta-d-glucopyranose (5), have been isolated from a methanol extract of the fruits of Morinda citrifolia (noni) along with 10 known compounds, namely, two anthraquinones (2, 3), six saccharide fatty acid esters (6-11), an iridoid glycoside (12), and a flavanol glycoside (13). Upon evaluation of six compounds (5-7, 9, 10, and 13) for inhibitory activity against 12-O-tetradecanoylphorbol-13-acetate (TPA)-induced inflammation (1 mug/ear) in mice, four saccharide fatty acid esters, 5-7 and 9, exhibited potent anti-inflammatory activity, with ID50 values of 0.46-0.79 mg per ear. In addition, when compounds 1-13 were evaluated against the Epstein-Barr virus early antigen (EBV-EA) activation induced by TPA, all of the compounds exhibited moderate inhibitory effects (IC50 values of 386-578 mol ratio/32 pmol TPA).-PMID: 17480098 [PubMed - as supplied by publisher]

**Hawaii Med J. 2004 Jun;63(6):182-4. Are immune responses pivotal to cancer patient's long term survival? Two clinical case-study reports on the effects of Morinda citrifolia (Noni).-Wong DK.-[kongwaiwong1@hotmail.com](mailto:kongwaiwong1@hotmail.com)**

In the State of Hawaii, there are abundant claims of benefit from cancer patients' use of the fruit juice of *Morinda citrifolia* (Noni). There is no well documented clinical report in peer review journals. The author here studiously examined 2 such claims through interview, review of the medical records and pathology slides. **The author concludes that these cases are valuable experiences and hope to stimulate interest in Noni research as an important part of adjuvant immunotherapy for cancer.**-PMID: 15298088 [PubMed - indexed for MEDLINE]

**Ann N Y Acad Sci. 2001 Dec;952:161-8.**

**Cancer preventive effect of *Morinda citrifolia* (Noni).-Wang MY, Su C.**

Department of Pathology, UIC College of Medicine, Rockford, Illinois 61107, USA. [mianwang@uic.edu](mailto:mianwang@uic.edu)

*Morinda citrifolia* (Noni) has been extensively used in folk medicine by Polynesians for over 2,000 years. It has been reported to have broad therapeutic effects, including anticancer activity, in both clinical practice and laboratory animal models. The mechanism for these effects remains unknown. The hypothesis that *Morinda citrifolia* possesses a cancer preventive effect at the initiation stage of carcinogenesis was studied. Our preliminary data indicated that 10% Tahitian Noni Liquid Dietary Supplement or Tahitian Noni Juice (TNJ), made from *Morinda citrifolia* fruit by Morinda Inc, in drinking water for one week was able to prevent DMBA-DNA adduct formation. The levels of DMBA-DNA adducts were reduced by 30% in the heart, 41% in the lung, 42% in the liver, and 80% in the kidney of female SD rats. Even more dramatic results were obtained in male C57 BL-6 mice: 10% TNJ was able to reduce DMBA-DNA adduct formation by 60% in the heart, 50% in the lung, 70% in the liver, and 90% in the kidney. In order to explore the mechanism of this preventive effect, the antioxidant activity of TNJ was examined in vitro by lipid hydroperoxide (LPO) and tetrazolium nitroblue (TNB) assays. In the LPO assay, LPO oxidizes leucomethylene blue to methylene blue in the presence of hemoglobin. The resultant blue color was quantified at 660 nm spectrophotometrically. In the TNB assay, superoxide anion radicals (SAR) reduce TNB into formazan blue that was also measured by absorption at 602 nm. TNJ showed a dose-dependent inhibition of both LPO and SAR in our system. The antioxidant activity of TNJ was compared to the effects of vitamin C, grape seed powder (GSP), and pycnogenol (PYC) at the daily dose per serving level recommended by U.S.RDAs or manufacturers. **The results suggest that prevention of carcinogen-DNA adduct formation and the antioxidant activity of TNJ may contribute to the cancer preventive effect of *Morinda citrifolia*.**-PMID: 11795436 [PubMed - indexed for MEDLINE]

**Phytother Res. 1999 Aug;13(5):380-7.**

**An immunomodulatory polysaccharide-rich substance from the fruit juice of *Morinda citrifolia* (noni) with antitumour activity.-Hirazumi A, Furusawa E.**

Department of Pharmacology, John A., Burns School of Medicine, 1960 East West Road, University of Hawaii, Honolulu, HI 96822, USA.

**The fruit juice of *Morinda citrifolia* (noni) contains a polysaccharide-rich substance (noni-ppt) with antitumour activity in the Lewis lung (LLC) peritoneal carcinomatosis model.** Therapeutic administration of noni-ppt significantly enhanced the duration of survival of inbred syngeneic LLC tumour bearing mice. It did not exert significant cytotoxic effects in an adapted culture of LLC cells, LLC1, but could activate peritoneal exudate cells (PEC) to impart profound toxicity when co-cultured with the tumour cells. This suggested the possibility that noni-ppt may suppress tumour growth through activation of the host immune system. Concomitant treatment with the immunosuppressive agent, 2-chloroadenosine (C1-Ade) or cyclosporin (cys-A) diminished its activity, thereby substantiating an immunomodulatory mechanism. Noni-ppt was also capable of stimulating the release of several mediators from murine effector cells, including tumour necrosis factor-alpha (TNF-alpha), interleukin-1beta (IL-1beta), IL-10, IL-12 p70, interferon-gamma (IFN-gamma) and nitric oxide (NO), but had no effect on IL-2 and suppressed IL-4 release. **Improved survival time and curative effects occurred when noni-ppt was combined with sub-optimal doses of the standard chemotherapeutic agents, adriamycin (Adria), cisplatin (CDDP), 5-fluorouracil (5-FU), and vincristine (VCR), suggesting important clinical applications of noni-ppt as a supplemental agent in cancer treatment.** Copyright 1999 John Wiley & Sons, Ltd.-PMID: 10441776 [PubMed - indexed for MEDLINE]

## Ganoderma Lucidum (Reishi)

When I learned of the Ganoderma Lucidum mushroom I was intrigued. So I did my investigation, as I always do, on [www.pubmed.gov](http://www.pubmed.gov). I was very impressed with all of the science that I found supporting its use. I was also very impressed with the results my daughter had with the Ganoderma. I have included a few of the hundreds of articles that I found for your education.

**J Ethnopharmacol. 2007 May 4;111(2):219-26. Epub 2006 Nov 21.**

**Ganoderma lucidum polysaccharides enhance the function of immunological effector cells in immunosuppressed mice. Zhu XL, Chen AF, Lin ZB.**

Department of Pharmacology, School of Basic Medical Science, Peking University Health Science Center, 38 Xueyuan Road, Beijing 100083, PR China.

The present study was designed to determine in vivo efficacy of Ganoderma lucidum polysaccharides (Gl-PS) for enhancing the activity of immunological effector cells in immunosuppressed mice. Mice were injected intraperitoneally (i.p.) once daily with low-dose (2.5mg/kg), intermediate-dose (25mg/kg), and high-dose (250mg/kg) of Gl-PS, respectively, for 7 consecutive days 24h after i.p. injection of a immunosuppressing anti-tumor agent cyclophosphamide (Cy, 300mg/kg). In Cy-treated mice, compared to vehicle, low-dose Gl-PS accelerated recovery of bone marrow cells, red blood cells and white blood cells, as well as splenic natural killer cells and natural killer T cells, and enhanced T and B cell proliferation responses on day 8, cytotoxic T lymphocyte activity on day 5, as well as NK cell and lymphokine activated killer cell activity on days 7-9. Furthermore, it promoted phagocytosis and cytotoxicity of macrophages on day 12. The above beneficial effects induced by the low-dose Gl-PS treatment did not result in any side effects. **These results demonstrate the efficacious effects of low-dose Gl-PS treatment for enhancing the activity of immunological effector cells in immunosuppressed mice, and may provide a basis for applying this herb as an efficacious adjacent immunopotentiating therapy against cancer chemotherapy-induced immunosuppression.** PMID: 17182202 [PubMed - in process]

**Zhongguo Zhong Yao Za Zhi. 2006 Oct;31(19):1618-22.**

**[Antitumor activity of extracts of Ganoderma lucidum and their protective effects on damaged HL-7702 cells induced by radiotherapy and chemotherapy]-[Article in Chinese] Wang DH, Weng XC.**

School of Life Sciences, Shanghai University, Shanghai 200444, China.

**OBJECTIVE:** To study the inhibitory effect of Ganoderma lucidum, the extract of chloroform, the extract of ethyl acetate and the remains after two-time extraction on BEL-7402 and MGC-803 cells and their protective effects on HL-7702 cells pre-and post-exposed to cisplatin (DDP) and various doses of <sup>60</sup>Co gamma irradiation. **METHOD:** The antitumor activity and protective effects on damaged HL-7702 cells induced by radiotherapy and chemotherapy of ganoderma lucidum were determined by MTT technique. **RESULT:** The anticancer activity of the extract of chloroform Ganoderma lucidum was the best: at the concentration of 0.125 mg x mL(-1), the inhibitory rate was over 50%. To the HL-7702 cells damaged by DDP, four kinds of extracts didn't exert restoring effect, but the pretreatment with the extract of chloroform reduced the damaged degree significantly. To the <sup>60</sup>Co gamma irradiated HL-7702 cells, only the extract of chloroform exerted restoring effect to some extent when exposed to middle or high dose of irradiation. The pre-administration of four kinds of extracts reduced the damaged degree by radiation. **CONCLUSION: The extract of chloroform exerts notable antitumor effects on cancer cells and protective effects on damaged normal cells induced by radiotherapy and chemotherapy.** PMID: 17165589 [PubMed - in process]

**Oncol Rep. 2006 Dec;16(6):1181-7.**

**Inhibitory effect of a water-soluble extract from the culture medium of Ganoderma lucidum (Reishi) mycelia on the development of pulmonary adenocarcinoma induced by N-nitrosobis (2-hydroxypropyl) amine in Wistar rats. Kashimoto N, Hayama M, Kamiya K, Watanabe H.**

Department of Experimental Oncology, Research Institute for Radiation Biology and Medicine, Hiroshima University, Hiroshima 734-8553, Japan.

A water-soluble extract from the culture medium of **Ganoderma lucidum (Rei-shi) mycelia (MAK)** has been

shown to exert a potent chemopreventive effect. The present study was designed to investigate the effects of dietary MAK supplementation on the development of lung tumors initiated by N-nitrosobis (2-hydroxypropyl) amine (BHP) in male Slc:Wistar rats. A total of 77 animals, 6 weeks of age, were divided into 5 groups and given BHP (2,000 ppm) in their drinking water for 10 weeks. The normal controls were not supplied with BHP. After treatment with the carcinogen, the rats were fed a normal control MF solid diet, or the same diet containing MAK (1.25%, 2.5% or 5%) for 12 weeks. Macroscopically, all the doses of MAK reduced the number of nodules, and the effect of 5% MAK was found to be especially significant. Microscopically, an increase in the number of proliferating cell nuclear antigen (PCNA)-negative tumors and a decrease in the number of tumors strongly positive for PCNA were observed in the tissue sections from the rats that had received all the doses of MAK. **The present results thus indicate that dietary supplementation with MAK inhibits the development of lung tumors, suggesting that MAK may be a potent chemopreventive agent against lung carcinogenesis.** PMID: 17089035 [PubMed - indexed for MEDLINE]

**Int J Oncol. 2006 Sep;29(3):695-703.**

**Ganoderma lucidum inhibits proliferation of human breast cancer cells by down-regulation of estrogen receptor and NF-kappaB signaling.** Jiang J, Slivova V, Sliva D.

Cancer Research Laboratory, Methodist Research Institute, Indianapolis, IN 46202, USA.

Ganoderma lucidum, an oriental medical mushroom, has been used in Asia for the prevention and treatment of a variety of diseases, including cancer. We have previously demonstrated that G. lucidum inhibits growth and induces cell cycle arrest at G0/G1 phase through the inhibition of Akt/NF-kappaB signaling in estrogen-independent human breast cancer cells. However, the molecular mechanism(s) responsible for the inhibitory effects of G. lucidum on the proliferation of estrogen-dependent (MCF-7) and estrogen-independent (MDA-MB-231) breast cancer cells remain to be elucidated. Here, we show that G. lucidum inhibited the proliferation of breast cancer MCF-7 and MDA-MB-231 cells by the modulation of the estrogen receptor (ER) and NF-kappaB signaling. Thus, G. lucidum down-regulated the expression of ERalpha in MCF-7 cells but did not effect the expression of ERbeta in MCF-7 and MDA-MB-231 cells.

In addition, G. lucidum inhibited estrogen-dependent as well as constitutive transactivation activity of ER through estrogen response element (ERE) in a reporter gene assay. G. lucidum decreased TNF-alpha-induced (MCF-7) as well as constitutive (MDA-MB-231) activity of NF-kappaB. The inhibition of ER and NF-kappaB pathways resulted in the down-regulation of expression of c-myc, finally suppressing proliferation of estrogen-dependent as well as estrogen-independent cancer cells. **Collectively, these results suggest that G. lucidum inhibits proliferation of human breast cancer cells and contain biologically active compounds with specificity against estrogen receptor and NF-kappaB signaling, and implicate G. lucidum as a suitable herb for chemoprevention and chemotherapy of breast cancer.** PMID: 16865287 [PubMed - indexed for MEDLINE]

**Biosci Biotechnol Biochem. 2006 Sep;70(9):2028-34. Epub 2006 Sep 7.**

**Anti-tumor activities of the antlered form of Ganoderma lucidum in allogeneic and syngeneic tumor-bearing mice.** Nonaka Y, Shibata H, Nakai M, Kurihara H, Ishibashi H, Kiso Y, Tanaka T, Yamaguchi H, Abe S.

Institute for Health Care Science, Suntory Ltd., Osaka, Japan. [Yuji\\_Nonaka@suntory.co.jp](mailto:Yuji_Nonaka@suntory.co.jp)

We investigated the anti-tumor effects of a dry powder preparation of the antlered form of Ganoderma lucidum (G. lucidum AF, rokkaku-reishi in Japanese), a variant type of G. lucidum, not only in allogeneic Sarcoma 180-bearing ddY mice, but also in syngeneic MM 46-bearing C3H/He mice. G. lucidum AF inhibited tumor growth and elongated the life span when orally administered to mice by free-feeding of a 2.5% G. lucidum AF-containing diet. It also showed anti-tumor activity in spite of post-feeding after tumor inoculation. G. lucidum AF significantly countered the depression of splenic CD8+ cells and protected the decrease in interferon-gamma (IFN-gamma) production in regional lymph nodes of MM 46-bearing mice, indicating that the anti-tumor activity of G. lucidum AF might be caused by its immunostimulating action. **These results suggest that the ingestion of G. lucidum AF can be useful for the prevention and curing of cancer.** PMID: 16960396 [PubMed - indexed for MEDLINE]

**Nutr Cancer. 2004;49(2):209-16.**

**Ganoderma lucidum suppresses growth of breast cancer cells through the inhibition of Akt/NF-kappaB signaling. Jiang J, Slivova V, Harvey K, Valachovicova T, Sliva D.**

Cancer Research Laboratory, Methodist Research Institute, Indianapolis, IN 46202, USA.

Ganoderma lucidum (Reishi, Lingzhi) is a popular Asian mushroom that has been used for more than 2 millennia for the general promotion of health and was therefore called the "Mushroom of Immortality." Ganoderma lucidum was also used in traditional Chinese medicine to prevent or treat a variety of diseases, including cancer. We previously demonstrated that Ganoderma lucidum suppresses the invasive behavior of breast cancer cells by inhibiting the transcription factor NF-kappaB. However, the molecular mechanisms responsible for the inhibitory effects of Ganoderma lucidum on the growth of highly invasive and metastatic breast cancer cells, has not been fully elucidated. Here, we show that Ganoderma lucidum inhibits proliferation of breast cancer MDA-MB-231 cells by downregulating Akt/NF-kappaB signaling. Ganoderma lucidum suppresses phosphorylation of Akt on Ser473 and downregulates the expression of Akt, which results in the inhibition of NF-kappaB activity in MDA-MB-231 cells. The biological effect of Ganoderma lucidum was demonstrated by cell cycle arrest at G0/G1, which was the result of the downregulation of expression of NF-kappaB-regulated cyclin D1, followed by the inhibition of cdk4. **Our results suggest that Ganoderma lucidum inhibits the growth of MDA-MB-231 breast cancer cells by modulating Akt/NF-kappaB signaling and could have potential therapeutic use for the treatment of breast cancer.** PMID: 15489214 [PubMed - indexed for MEDLINE]

**Int J Oncol. 2004 May;24(5):1093-9.**

**Ganoderma lucidum inhibits proliferation and induces apoptosis in human prostate cancer cells PC-3. Jiang J, Slivova V, Valachovicova T, Harvey K, Sliva D.**

Cancer Research Laboratory, Methodist Research Institute, E504, Indianapolis, IN 46202, USA.

**Ganoderma lucidum (Reishi), an oriental medical mushroom, has been widely used in Asian countries for centuries to prevent or treat different diseases, including cancer.** However, the mechanism(s) responsible for the effects of Ganoderma lucidum on cancer cells remain to be elucidated. We have previously demonstrated that Ganoderma lucidum down-regulated the expression of NF-kappaB-regulated urokinase plasminogen activator (uPA) and uPA receptor (uPAR), which resulted in suppression of cell migration of highly invasive human breast and prostate cancer cells. In this study, we investigated the effects of Ganoderma lucidum on cell proliferation, cell cycle, and apoptosis in human prostate cancer cells PC-3. Our data demonstrate that Ganoderma lucidum inhibits cell proliferation in a dose- and time-dependent manner by the down-regulation of expression of cyclin B and Cdc2 and by the up-regulation of p21 expression. The inhibition of cell growth was also demonstrated by cell cycle arrest at G2/M phase. Furthermore, Ganoderma lucidum induced apoptosis of PC-3 cells with a slight decrease in the expression of NF-kappaB-regulated Bcl-2 and Bcl-xl. However, the expression of proapoptotic Bax protein was markedly up-regulated, resulting in the enhancement of the ratio of Bax/Bcl-2 and Bax/Bcl-xl. **Thus, Ganoderma lucidum exerts its effect on cancer cells by multiple mechanisms and may have potential therapeutic use for the prevention and treatment of cancer.** PMID: 15067330 [PubMed - indexed for MEDLINE]

**Integr Cancer Ther. 2003 Dec;2(4):358-64.**

**Ganoderma lucidum (Reishi) in cancer treatment.Sliva D.**

Cancer Research Laboratory, Methodist Research Institute, Indianapolis, IN 46202, USA. [d-silva@clarian.org](mailto:d-silva@clarian.org)

The popular edible mushroom Ganoderma lucidum (Reishi) has been widely used for the general promotion of health and longevity in Asian countries. The dried powder of Ganoderma lucidum was popular as a cancer chemotherapy agent in ancient China. The authors recently demonstrated that Ganoderma lucidum inhibits constitutively active transcription factors nuclear factor kappa B (NF-kappaB) and AP-1, which resulted in the inhibition of expression of urokinase-type plasminogen activator (uPA) and its receptor uPAR. **Ganoderma lucidum also suppressed cell adhesion and cell migration of highly invasive breast and prostate cancer cells, suggesting its potency to reduce tumor invasiveness. Thus, Ganoderma lucidum clearly**

**demonstrates anticancer activity in experiments with cancer cells and has possible therapeutic potential as a dietary supplement for an alternative therapy for breast and prostate cancer.** However, because of the availability of *Ganoderma lucidum* from different sources, it is advisable to test its biologic activity. PMID: 14713328 [PubMed - indexed for MEDLINE]-**Author's Note: This is the reason I use the *Ganoderma lucidum* from Gano Excel. To learn more about *Ganoderma lucidum* go to [www.BuyHealthyCoffee.us](http://www.BuyHealthyCoffee.us).**

**Teratog Carcinog Mutagen.** 2003;Suppl 1:85-97.

**Antiperoxidative, anti-inflammatory, and antimutagenic activities of ethanol extract of the mycelium of *Ganoderma lucidum* occurring in South India.-Lakshmi B, Ajith TA, Sheena N, Gunapalan N, Janardhanan KK.**

**Amala Cancer Research Centre, Thrissur, Kerala, India.**

Free radical mediated genetic instability is widely thought to be a major etiological factor for initiation of carcinogenesis. Mushrooms represent a largely untapped source of powerful new pharmaceutical products. In the present study, we examined the antiperoxidative, anti-inflammatory, and antimutagenic activities of the ethanol extract of the mycelium of a medicinal mushroom, *Ganoderma lucidum*, occurring in south India. Antiperoxidative activity was evaluated using Fe(2+)-ascorbate-induced lipid peroxidation in rat liver homogenate and a phorbol ester (croton oil)-induced lipid peroxidation in mouse skin. Antiinflammatory activity was evaluated against carrageenan-induced acute and formalin-induced chronic inflammatory paw edema in mouse and phorbol ester-induced mouse skin inflammation. Antimutagenic activity was determined by the Ames mutagenicity assay using histidine mutant of *Salmonella typhimurium* strains TA 98, TA100, and TA102. Sodium azide (NaN(3)), N-methyl-N-nitro-N-nitrosoguanidine (MNNG), 4-nitro-o-phenylenediamine (NPD), and benzo[a]pyrene (B[a]P) were used as the mutagens. The extract showed significant inhibition of Fe(2+)-induced peroxidation of lipid in rat liver (IC(50) 510 +/- 22 microg/ml) and 37% inhibition of croton oil-induced peroxidation on the mouse skin at 20 mg/0.1 ml/skin. Carrageenan-induced acute and formalin-induced chronic inflammatory edema were inhibited by 56 and 60%, respectively, by the extract at 1,000 mg/kg body wt (i.p). The extract at a concentration of 5 mg/plate showed inhibition of mutagenicity elicited by direct acting mutagens, NaN(3) (55.5 and 75.7%) and MNNG (50.0 and 57.5%) for *S. typhimurium* strains TA100 and TA102, respectively. The extract at the same concentration also inhibited mutagenicity elicited by NPD (52.4 and 64.2%) and B[a]P (60.7 and 59.6%) for TA98 and TA100 strains, respectively. The B[a]P was activated in the presence of rat liver microsomal (S9) fraction. **The results of our study revealed that ethanol extract of *Ganoderma lucidum* mycelium possessed significant anti-peroxidative, anti-inflammatory, and anti-mutagenic activities. The findings suggest a medicinal use for the ethanol extract of the mycelium of *G. lucidum* occurring in South India.** Copyright 2003 Wiley-Liss, Inc. PMID: 12616600 [PubMed - indexed for MEDLINE]

**Biochem Biophys Res Commun.** 2002 Nov 8;298(4):603-12.

***Ganoderma lucidum* suppresses motility of highly invasive breast and prostate cancer cells.-Sliva D, Labarrere C, Slivova V, Sedlak M, Lloyd FP Jr, Ho NW.**

Cancer Research Laboratory, Methodist Research Institute, 1800 N Capitol Avenue E504, Indianapolis, IN 46202, USA. [dsliva@clarian.org](mailto:dsliva@clarian.org)

A dried powder from basidiomycetous fungi, *Ganoderma lucidum*, has been used in East Asia in therapies for several different diseases, including cancer. However, the molecular mechanisms involved in the biological actions of *Ganoderma* are not well understood. We have recently demonstrated that phosphatidylinositol 3-kinase (PI 3-kinase) and nuclear factor-kappaB (NF-kappaB) regulate motility of highly invasive human breast cancer cells by the secretion of urokinase-type plasminogen activator (uPA). In this study, we investigated the effect of *G. lucidum* on highly invasive breast and prostate cancer cells. Here we show that spores or dried fruiting body of *G. lucidum* inhibit constitutively active transcription factors AP-1 and NF-kappaB in breast MDA-MB-231 and prostate PC-3 cancer cells. Furthermore, *Ganoderma* inhibition of expression of uPA and uPA receptor (uPAR), as well secretion of uPA, resulted in the suppression of the migration of MDA-MB-231 and PC-3 cells. **Our data suggest that spores and unpurified fruiting body of *G. lucidum* inhibit invasion of breast and prostate cancer cells by a common mechanism and could have potential therapeutic use for cancer treatment.** PMID: 12408995 [PubMed - indexed for MEDLINE]

**Phytother Res.** 2001 May;15(3):245-9.

**Inhibition of lipid peroxidation and oxidative DNA damage by Ganoderma lucidum.-Lee JM, Kwon H, Jeong H, Lee JW, Lee SY, Baek SJ, Surh YJ.**

**College of Pharmacy, Seoul National University, Seoul 151-742, South Korea.**

Reactive oxygen species (ROS), such as superoxide anions and hydroxyl radicals, are associated with carcinogenesis and other pathophysiological conditions. Therefore, elimination or inactivation of ROS or inhibition of their excess generation may be beneficial in terms of reducing the risk for cancer and other diseases. Ganoderma lucidum has been used in traditional oriental medicine and has potential antiinflammatory and antioxidant activities. In the present study, we tested the amino-polysaccharide fraction (designated as 'G009') from Ganoderma lucidum for the ability to protect against oxidative damage induced by ROS. G009 significantly inhibited iron-induced lipid peroxidation in rat brain homogenates and showed a dose-dependent inactivation of hydroxyl radicals and superoxide anions. It also reduced strand breakage in phiX174 supercoiled DNA caused by UV-induced photolysis of hydrogen peroxide and attenuated phorbol ester-induced generation of superoxide anions in differentiated human promyelocytic leukaemia (HL-60) cells. **These findings suggest that G009 from Ganoderma lucidum possesses chemopreventive potential.** Copyright 2001 John Wiley & Sons, Ltd. PMID: 11351361 [PubMed - indexed for MEDLINE]

**Transplantation.** 1995 Sep 15;60(5):438-43.

**Ling Zhi-8: studies of a new immunomodulating agent.-van der Hem LG, van der Vliet JA, Bocken CF, Kino K, Hoitsma AJ, Tax WJ.**

**Department of Surgery, University Hospital Nijmegen, The Netherlands.**

**Ling Zhi-8 (LZ-8) is a protein derived from the fungus Ganoderma lucidum and has immunomodulatory capacities.** It was shown to be mitogenic toward mouse splenocytes in vitro and immunosuppressive in vivo by reducing antigen-induced antibody formation and by preventing completely the incidence of autoimmune diabetes in nonobese diabetic mice. In this study, the mitogenic effects of LZ-8 on human mononuclear cells are reported. In accordance to its mitogenic effect on mouse splenocytes, LZ-8 proved to be mitogenic for human PBMC. This mitogenic effect of LZ-8 apparently required the presence of monocytes. We also demonstrated it to be immunosuppressive in vitro in a human MLC performed in the absence of monocytes, using purified T cells and EBV-transformed allogeneic B cells. Furthermore, we tested LZ-8 for its possible suppressive effects in 2 different models of allogeneic tissue transplantation. **LZ-8 proved to have a significant effect on cellular immunity, since its administration in an allografted mouse skin model resulted in an increased survival time. In a model of transplanted allogeneic pancreatic rat islets, LZ-8 was effective in delaying the rejection process of allografted islets. More frequent or continuous administration resulted in a further prolongation of survival time. No serious side effects of LZ-8 could be discerned in these experiments.** PMID: 7676490 [PubMed - indexed for MEDLINE]

### Whey Protein

I know this may sound contradictory, but I thought you should read the two articles that I found and the scientific information on Whey Protein. The whole purpose of this report is to provide you with the information necessary for you to make an educated decision regarding your health.

#### **08.19.05 -- Another Use for Whey Protein: Helping Diabetics Control Their Blood Sugar**

**By Greg Arnold, DC, CSCS, July 28, 2005, abstracted from "Effect of whey on blood glucose and insulin responses to composite breakfast and lunch meals in type 2 diabetic subjects" in the July 2005 issue of the American Journal of Clinical Nutrition**

As a pure, natural, high quality protein from cow's milk, whey protein is an excellent protein to help build muscle. But whey protein has a myriad of other health benefits, having been found to 1) decrease blood pressure, 2) help

prevent cancer 3) improve bone health, 4) and strengthen your immune system. 5) Finally, whey protein is even used to help treat HIV infections.

**Now a new study 5 has found another use for whey protein: helping diabetics control their blood sugar.** Inability to control blood sugar is the hallmark of Type 2 diabetes and is the primary culprit in the health complications associated with Type 2 diabetes, including increased risks for heart disease, blindness, nerve and kidney damage.<sup>6</sup> As a result, controlling blood sugar is vital to managing (and of course preventing) Type 2 diabetes.

In the study, 14 subjects with Type 2 diabetes were served a high-Glycemic Index breakfast (white bread) followed by a high-Glycemic Index lunch (mashed potatoes with meatballs). These meals were supplemented with whey protein on one day and lean ham and lactose on another day. The researchers took blood samples before and during four hours after breakfast and three hours after lunch.

The researchers found that whey protein increased the release of insulin, the hormone responsible for controlling blood sugar, by 31 percent after breakfast and 57 percent after lunch compared to the control. As a result, blood glucose levels were “significantly reduced” after whey ingestion, but only after lunch. Researchers reasoned that since insulin resistance is higher in the morning after the overnight fast, this explained whey’s inability to reduce blood sugar levels after breakfast.

Nevertheless, “the addition of whey to meals with rapidly digested and absorbed carbohydrates stimulates insulin release and reduces postprandial blood glucose” and provides Type 2 diabetics with another way to help control their blood sugar and manage their condition.

*Greg Arnold is a Chiropractic Physician practicing in Danville, CA. You can contact Dr. Arnold directly by emailing him at <mailto:ChiroDocPSUalum@msn.com> or visiting his website [www.CompleteChiropracticHealthcare.com](http://www.CompleteChiropracticHealthcare.com)*

#### **Reference:**

- 1 FitzGerald, R. J., B. A. Murray, et al. (2004). "Hypotensive peptides from milk proteins." *J Nutr* 134(4): 980S-8S
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- 6 “Type 2 Diabetes” from the American Diabetes Association website: <http://www.diabetes.org/type-2-diabetes.jsp>

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#### **ORIGINAL RESEARCH COMMUNICATION**

#### **Effect of whey on blood glucose and insulin responses to composite breakfast and lunch meals in type 2 diabetic subjects<sup>1,2,3</sup> -Anders H Frid, Mikael Nilsson, Jens Juul Holst and Inger ME Björck**

1 From the Clinic of Endocrinology, University Hospital MAS, Malmö, Sweden (AHF); the Department of Applied Nutrition and Food Chemistry, Lund University, Lund, Sweden (MN and IMEB); and the Department of Medical Physiology, The Panum Institute, University of Copenhagen, Copenhagen, Denmark (JJH)

**Background:** Whey proteins have insulinotropic effects and reduce the postprandial glycemia in healthy subjects. The mechanism is not known, but insulinogenic amino acids and the incretin hormones seem to be involved.

**Objective:** The aim was to evaluate whether supplementation of meals with a high glycemic index (GI) with whey proteins may increase insulin secretion and improve blood glucose control in type 2 diabetic subjects.

**Design:** Fourteen diet-treated subjects with type 2 diabetes were served a high-GI breakfast (white bread) and subsequent high-GI lunch (mashed potatoes with meatballs). The breakfast and lunch meals were supplemented with whey on one day; whey was exchanged for lean ham and lactose on another day. Venous blood samples were drawn before and during 4 h after breakfast and 3 h after lunch for the measurement of blood glucose, serum insulin, glucose-dependent insulintropic polypeptide (GIP), and glucagon-like peptide 1 (GLP-1).

**Results:** The insulin responses were higher after both breakfast (31%) and lunch (57%) when whey was included in the meal than when whey was not included. After lunch, the blood glucose response was significantly reduced [-21%; 120 min area under the curve (AUC)] after whey ingestion. Postprandial GIP responses were higher after whey ingestion, whereas no differences were found in GLP-1 between the reference and test meals.

**Conclusions:** It can be concluded that the addition of whey to meals with rapidly digested and absorbed carbohydrates stimulates insulin release and reduces postprandial blood glucose excursion after a lunch meal consisting of mashed potatoes and meatballs in type 2 diabetic subjects.

**Key Words:** Milk • whey • type 2 diabetes • blood glucose • serum insulin • incretin hormones

I found the following article on [www.LearningPlaceOnline.com](http://www.LearningPlaceOnline.com). When you come to the end of this article you will read that Ms. Place does agree **that milk has many substances that we should not be consuming.**

## **Supplement Savvy for Cancer: Whey Protein**

By Jill Place, MA, RD

### **What It Is . . .**

Remember Miss Muffet and her curds and whey? Whey is protein left over after cheese is made from cow's milk. This leftover whey protein can then be refined to a high quality with cross-flow microfiltration, ion exchange, and other processes that concentrate the protein and the immunoglobulins in it without inactivating them. The best way to keep whey protein stable and active without using preservatives is to make it in powder form. So, most supplements come in powders or capsules.

### **What It Does . . .**

Whey protein has the highest biological value of any protein, so it's the protein best absorbed by your body. **Whey protein may be able to:**

- **show your immune system where unfriendly bacteria, yeasts, molds, and toxins are in your gut,** also known as Bad Gut Guys, **so that your immune system can destroy them .**
- bind iron with the **whey protein Lactoferrin**, which helps to **starve out the Bad Gut Guys.** Lactoferrin may also **keep the Bad Gut Guys from invading your intestinal walls.** Lactoferrin and lipoic acid may be a better bet to prevent anemia than iron in some cases.
- **damage the Bad Gut Guys** by Lactoperoxidase, a whey protein enzyme.
- **keep the Bad Gut Guys from sticking to intestinal walls** with its Globulin Proteins so that they're unable get a foothold to grow.
- upping Glutathione levels and therefore upping immune response. Glutathione is a protein that's important for maintaining cell and immune health.
- **increase immunity and intestinal health** with Immunoglobulins.
- **prevent diarrhea and other digestive problems.**

## What To Do . . .

Since this type of protein comes in powdered form, it's perfect for shake recipes. Shakes are great for a quick, nutritious meal when you're on the go. **Shakes are also great if you just can't eat during chemotherapy or radiation and are losing weight.** Just drink a couple of these every day:

### Blend in blender:

2 to 3 ounces fresh tofu or 1 cup soy, almond, or grain milk and/or 1 serving whey protein powder with any or all of the following:

- 4 to 8 ounces fresh juice (if you have mouth sores you may want to stick to low-acid types)
- 1 cup yogurt, frozen yogurt, or soy ice cream
- -1 cup frozen fruit (any type)
- 1 frozen banana (skin; freeze in zip lock bag)
- 1 large carrot or carrot or other vegetable juice
- 1 Tablespoon flax seeds or flax seed meal
- 1 Tablespoon wheat germ
- 1 Tablespoon wheat or rice bran
- 1 to 2 teaspoons flavor extracts, like almond, coconut, banana, and/or vanilla
- 2 to 4 drops Stevia, a natural non-caloric sweetener sold as a nutritional supplement
- 4 to 6 ice cubes, added one at a time to make a slushy

## What To Watch Out For . . .

**Because most milk has hormones and other undesirable substances, it's important that the milk used to produce this supplement is free from disease, hormones, immunizations, and contamination.**

Those who are sensitive to milk proteins and products may not be able to tolerate whey protein. The way it's made, however, may make it safe to use for those who are lactose intolerant. If you're lactose intolerant and interested in taking whey protein, proceed with caution with small amounts and build up to a full dose gradually over a few weeks. Discontinue use if you have bloating, abdominal pain, diarrhea, or other symptoms. © Copyright 2002 Jill Place, MA, RD

I included this article, because after learning more about whey protein I thought you would like to know the benefits and disadvantages of dairy products. It seems that the way whey is processed; the **cold processed ion exchange** form may be helpful. I found a company that has a cold processed ion exchange form of the whey that has a very low amount of lactose, which is very pure and bio-available. According to NutriHarmony their Ion-Exchange Whey Protein has less than 1% lactose and is approved for lactose intolerant individuals. NutriHarmony uses a proprietary process that uses magnets and energy to "clean" the whey and a special gravity fed micro filtration system and cold air-drying process that allows their whey to retain the maximum BCAA's. Their web site is [www.NutriHarmony.com/healthy1](http://www.NutriHarmony.com/healthy1).

**Curr Pharm Des.** 2007;13(8):813-28.

### **A Role for Milk Proteins and their Peptides in Cancer Prevention.**

**Parodi PW.**-Dairy Australia, Human Nutrition and Health Research, Melbourne, Australia. [peterparodi@uq.net.au](mailto:peterparodi@uq.net.au).

A role for the amount and type of dietary protein in the etiology of cancer has not been studied extensively. **Nevertheless, there is no compelling evidence from epidemiological studies to indicate that protein, at levels usually consumed, is a risk factor for cancer. On the other hand, animal studies suggest that certain peptides and amino acids derived from dietary proteins may influence carcinogenesis.** The predominant protein in milk, casein, its peptides, but not liberated amino acids, have antimutagenic properties. Animal models, usually for colon and mammary tumorigenesis, nearly always show that whey protein is superior to other dietary proteins for suppression of tumour development. This benefit is attributed to its high content of cystine/cysteine and gamma-glutamylcyst(e)ine dipeptides, which are efficient substrates for the synthesis of glutathione. Glutathione is an ubiquitous cellular antioxidant that directly or through its associated

enzymes destroys reactive oxygen species, detoxifies carcinogens, maintains proteins in a reduced state and ensures a competent immune system. Various experiments showed that tumour prevention by dietary whey protein was accompanied by increased glutathione levels in serum and tissues as well as enhanced splenic lymphocyte proliferation, phagocytosis and natural killer, T helper and cytotoxic T cell activity. **Whey protein components, beta-lactoglobulin, alpha-lactalbumin, and serum albumin were studied infrequently, but results suggest they have anticancer potential.** The minor component lactoferrin has received the most attention; it inhibits intestinal tumours and perhaps tumours at other sites. Lactoferrin acts by induction of apoptosis, inhibition of angiogenesis, modulation of carcinogen metabolising enzymes and perhaps acting as an iron scavenger. Supplementing cows with selenium increases the content of selenoproteins in milk, which on isolation inhibited colon tumorigenesis in rats.-PMID: 17430183 [PubMed - in process]

**Anticancer Res. 2003 Mar-Apr;23(2B):1411-5.**

**The antioxidant system.-Bounous G, Molson JH.**

Research and Development Department, Immunotec Research Ltd., 292 Adrien Patenaude, Vaudreuil-Dorion, Québec, Canada J7V 5V5.

The glutathione (GSH) antioxidant system is the principal protective mechanism of the cell and is a crucial factor in the development of the immune response by the immune cells. Experimental data demonstrate that a cysteine-rich whey protein concentrate represents an effective cysteine delivery system for GSH replenishment during the immune response. Animal experiments showed that the concentrates of whey protein also exhibit anticancer activity. They do this via the GSH pathway, the induction of p53 protein in transformed cells and inhibition of neoangiogenesis.-PMID: 12820403 [PubMed - indexed for MEDLINE]

**J Nutr. 2001 Dec;131(12):3281-7.**

**Soy and whey proteins downregulate DMBA-induced liver and mammary gland CYP1 expression in female rats.-Rowlands JC, He L, Hakkak R, Ronis MJ, Badger TM.**

Arkansas Children's Nutrition Center and Department of Pediatrics, University of Arkansas for Medical Sciences, Little Rock, AR 72202, USA. [jcrowlands@salvitas.com](mailto:jcrowlands@salvitas.com)

One possible mechanism by which diet may reduce cancer risk is through enhancement of metabolic systems that prevent activation of carcinogens or accelerate carcinogen inactivation. We studied the effects of diet and 7,12-dimethylbenz-(a)anthracene (DMBA) on hepatic and mammary gland CYP1A1, CYP1A2 and CYP1B1 enzymes in female Sprague-Dawley rats. Diets (AIN-93G) were fed from conception to adulthood, and DMBA was given by oral gavage at age 48-50 d. The protein sources of diets were casein (CAS), soy protein isolate (SPI) or whey protein hydrolysate (WPH). The DMBA-induced hepatic ethoxyresorufin-O-deethylase and methoxyresorufin-O-demethylase activities and CYP1A1 protein and mRNA expression were lower ( $P < 0.05$ ) in SPI-fed rats compared with those fed casein. Differences in mammary gland CYP1 expression were also observed with decreased DMBA induction ( $P < 0.05$ ) of all three CYP1 proteins and mRNAs in rats fed either SPI or WPH compared with those fed CAS. Most notable were the decreased constitutive and DMBA-induced mammary gland expression of CYP1B1 protein of 93 and 96%, respectively, in the SPI-fed rats relative to the CAS-fed controls. The diet-induced changes in CYP1 enzyme expression were consistent with changes in the AhR and ARNT transcription factors that regulate them. Decreased ( $P < 0.05$ ) mammary constitutive AhR and ARNT proteins were measured in SPI-fed rats. There was also a 100% increase in constitutive AhR protein in the WPH-fed rats that paralleled a 100% increase in constitutive CYP1B1 protein in the mammary gland. **These results demonstrate the importance of diet in regulation of phase I metabolism in liver and mammary gland, and suggest a potential mechanism by which soy or whey proteins reduce DMBA-induced mammary tumor incidence.**-PMID: 11739881 [PubMed - indexed for MEDLINE]

**Anticancer Res. 2000 Nov-Dec;20(6C):4785-92.**

**Whey protein concentrate (WPC) and glutathione modulation in cancer treatment.**

**Bounous G.**-Research & Development Department, Immunotec Research Ltd., 292 Adrien-Patenaude, Vaudreuil-Dorion, Quebec, Canada, J7V 5V5.

The glutathione (GSH) antioxidant system is foremost among the cellular protective mechanisms. Depletion of this small molecule is a common consequence of increased formation of reactive oxygen species during increased cellular activities. This phenomenon can occur in the lymphocytes during the development of the immune response and in the muscular cells during strenuous exercise. It is not surprising that so much research has been done, and is still being done on this small tripeptide molecule. **Whey protein concentrate has been shown to represent an effective and safe cysteine donor for GSH replenishment during GSH depletion in immune deficiency states.** Cysteine is the crucial limiting amino acid for intracellular GSH synthesis. **Animal experiments showed that the concentrates of whey proteins also exhibit anti-carcinogenesis and anticancer activity.** They do this via their effect on increasing GSH concentration in relevant tissues, and may have anti-tumor effect on low volume of tumor via stimulation of immunity through the GSH pathway. It is considered that oxygen radical generation is frequently a critical step in carcinogenesis, hence the effect of GSH on free radicals as well as carcinogen detoxification, could be important in inhibiting carcinogenesis induced by a number of different mechanisms. **Case reports are presented which strongly suggest an anti-tumor effect of a whey protein dietary supplement in some urogenital cancers.** This non toxic dietary intervention, which is not based on the principles of current cancer chemotherapy, will hopefully attract the attention of laboratory and clinical oncologists. -PMID: 11205219 [PubMed - indexed for MEDLINE]

In my research I found some people who were very happy with a product called Essiac so I decided to find out more about it. For more information on Essiac you can also go to [www.essiacinfo.org/](http://www.essiacinfo.org/)

I found the following information while searching the net at [www.cancer-info.com/essiac.htm](http://www.cancer-info.com/essiac.htm) :

#### **Essiac: (ess-ee-ack):**

Essiac is the most popular and favorite alternative medicine for cancer of all alternative remedies for cancer. If you are looking for an alternative medicine to compliment your cancer care, essiac would be a good first choice.

Essiac has been used for over 60 years to remedy the side effects of cancer treatments and to remedy cancer itself. Essiac is a time proven safe remedy for cancer.

**History of Essiac and Rene Caisse.** Canada's Cancer Nurse.

Rene Caisse spent her whole adult life treating cancer patients along with her life long friend, Mary McPherson, with this herb tea in her own clinic, until she died in 1978 at the age of 91. Many of the people she treated for cancer reported they were miraculously cured by taking it, while others claimed the tea relieved the pain and agony of cancer and made their lives living with cancer much more bearable.

When Rene presented her Essiac and its effectiveness to the medical society, some doctors were so impressed by the results that they petitioned the Canadian Government in 1938 to pass a Bill to "authorize Rene Caisse to practice medicine in the Province of Ontario in the treatment of Cancer and conditions resulting there from".

The Bill failed to pass by only 3 votes. Soon after, a Legislative Assembly passed "An Act For The Investigation Of Remedies For Cancer", by which Rene would have to reveal her formula. Rather than do this, Rene closed her clinic, later opening it again at the behest of the Minister of Health. Thereafter, she was allowed to treat patients certified as terminal by their physicians.

Rene Caisse kept the formula a secret all those years, fearing it would be exploited. Finally, 14 months before she died, she signed the properties (formula, trademark name Essiac®, notes, etc.) over to a Canadian company named Resperin, with hopes that it would clinically validated (which Resperin failed to do) and made available to all people.

Resperin failed miserably with the manufacturing of their "ORIGINAL RECIPE" Essiac. The ESSIAC manufactured by RESPERIN was of such poor quality that users felt that RESPERIN where not using the correct formula.

To date, RESPERIN no longer is the manufacturer of ESSIAC.

**Essiac Information:** Essiac has become a generic name for a herbal tea that is today's most popular alternative remedy for cancer. Essiac was originally an herbal tea attributed to Canadian nurse Rene Caisse (reen-case) of

Bracebridge Ontario, Canada, who claimed that the formula came from a Native Ojibwa medicine man. She named it after the backward spelling of her own last name, Caisse.

Many users of essiac believe that essiac can and does improve the body's ability to fight cancer and that essiac is effective at reducing the side effects of chemotherapy and radiation treatments. Users have reported that with the reduction in chemotherapy/radiation side effects, they are much better able to handle the full course of their treatments without interruption and delays in treatment.

### **Fresh is best.**

**The Ingredients of Essiac:** The herbs in essiac are safe to use and are in some instances used individually as culinary herbs in food preparation and as additions to garden salads. Burdock root, an important ingredient in essiac was actually used as a prepared candy by the Ojibwa Natives of North America. Boiled in maple syrup, burdock root was eaten through the winter as a nutritious snack and candy.

**J Altern Complement Med. 2004 Aug; 10(4):687-91.-Inhibition of prostate cancer-cell proliferation by Essiac.**

**Ottenweller J, Putt K, Blumenthal EJ, Dhawale S, Dhawale SW.-Department of Biology, Indiana University-Purdue University Fort Wayne, Fort Wayne, IN, USA.**

**OBJECTIVE:** To assess the ability of Essiac tea extracts (Essiac Canada International, Ottawa, Canada) to modulate cancer cell proliferation and immune responsiveness. **DESIGN:** A noncancerous transformed cell line was compared to a cancerous cell line and spleen cells that had been isolated from mice to examine proliferation responses mediated by the addition of an Essiac preparation. **RESULTS:** We found in vitro evidence of decreased proliferation of both noncancerous transformed (CHO) and cancerous prostate cell line (LNCaP) when Essiac was present in the culture media. A dose response for inhibition was demonstrated by a linear regression performed on the data for both the CHO and LNCaP cells. The percent inhibition of the LNCaP cells was higher than the percent inhibition of the CHO cells suggesting that Essiac may have a more selective effect on cancer cells than transformed cells. In addition, the effects of Essiac were examined in an immune T-lymphocyte proliferation assay. At low doses of Essiac, augmentation of proliferation of these T cells was demonstrated, but at higher doses Essiac was inhibitory to T-cell proliferation. The same doses of Essiac that stimulated spleen cells were inhibitory for LNCaP cell proliferation. **CONCLUSIONS: Essiac preparations may be able to inhibit tumor cell growth while enhancing immune response to antigenic stimulation. This may be especially valuable in immune-suppressed individuals.** PMID: 15353028 [PubMed - in process]

Essiac can be found in your local health food store.

**The following information came from The National Cancer Institute web site <http://www.nci.nih.gov/cancertopics/pdq/cam/essiac>**

### **Overview**

This complementary and alternative medicine (CAM) information summary provides an overview of the use of Essiac and Flor•Essence, which are proprietary herbal tea mixtures, as treatments for patients with cancer. The summary includes a brief history of the development of Essiac and Flor•Essence; a review of laboratory, animal, and human studies; and possible side effects associated with Essiac and Flor•Essence use.

This summary contains the following key information:

- Essiac and Flor•Essence are herbal tea mixtures originally developed in Canada.
- These products are marketed worldwide as dietary supplements.
- Proponents have claimed that Essiac and Flor•Essence can help detoxify the body and strengthen the immune system.
- Proponents of Essiac have claimed further that it can help relieve pain, improve quality of life, and reduce tumor size.
- Molecules with antioxidant, anti-inflammatory, anticancer, or immunostimulatory activity have been identified in the individual herbs in the Essiac and Flor•Essence formulas.
- No data are available from animal or human studies to suggest that Essiac or Flor•Essence can be effective in the treatment of patients with cancer.

Essiac and Flor•Essence are proprietary herbal tea mixtures produced by different manufacturers. Essiac is reported to contain 4 herbs: burdock root (*Arctium lappa*), Indian rhubarb root (*Rheum palmatum*, sometimes known as Turkish rhubarb), sheep sorrel (*Rumex acetosella*), and the inner bark of slippery elm (*Ulmus fulva* or *Ulmus rubra*).[1] Reviewed in [2-10] Flor•Essence is reported to contain the same 4 herbs as Essiac, plus 4 “potentiating” herbs: watercress (*Nasturtium officinale*), blessed thistle (*Cnicus benedictus*), red clover (*Trifolium pratense*), and kelp (*Laminaria digitata*).[11] Reviewed in [2-4,7]

The manufacturers of Essiac and Flor•Essence both claim they market the original herbal mixture promoted by the developer.[1,11] Although only 1 company manufactures Flor•Essence,[11] several companies produce and market Essiac-like products. Reviewed in [2,3,10] This summary contains information about the trademarked mixtures only and differentiates between the 2 products wherever possible.

Essiac and Flor•Essence are said to detoxify the body and strengthen the immune system.[1,11] Reviewed in [4,6,7,9] Proponents of Essiac claim further that it helps relieve pain, improves overall quality of life, may reduce tumor size, and may prolong the survival of patients with various types of cancer. Reviewed in [4,7,9] The individual herbs in the Essiac and Flor•Essence formulas have been shown to contain molecules that have anticancer, anti-inflammatory, antioxidant, or immunostimulatory activity (see Laboratory/Animal/Preclinical Studies). Reviewed in [2-4,9,12-15] It is said that the benefits of Essiac and Flor•Essence are dependent on the presence of the constituent herbs in the correct proportions. Reviewed in [2-4,9] A mixture of the Essiac herbs has shown a decreased proliferation of a prostate cancer cell line.[16]

Although the use of Essiac and Flor•Essence is generally associated with cancer, both products have been used to treat other health conditions. Essiac has reportedly been used to control diabetes and to treat acquired immunodeficiency syndrome (AIDS). Reviewed in [6] Flor•Essence has reportedly been studied in Russia as a treatment for chronic gastrointestinal diseases (i.e., esophagitis, gastritis, duodenitis, and colitis) and as a treatment for cirrhosis of the liver. Reviewed in [2] No data have been published in the peer-reviewed, scientific literature, however, to show the safety or the efficacy of Essiac or Flor•Essence in patients with cancer or these other health conditions (see also Human/Clinical Studies).

Essiac and Flor•Essence are sold worldwide as health tonics or herbal dietary supplements.[1,11] Reviewed in [2-4,10] In the United States, health tonics and dietary supplements are regulated as foods, not drugs. Therefore, premarket evaluation and approval by the Food and Drug Administration (FDA) are not required and specific disease treatment or prevention claims are not allowed. Because health tonics and dietary supplements are not formally inspected for manufacturing consistency, there may be considerable variation from lot to lot, and there is no guarantee that ingredients identified on product labels are present at all or are present in the specified amounts. It is important to note that the FDA has not approved the use of either Essiac or Flor•Essence for the treatment of patients with cancer or any other medical condition.

To conduct clinical drug research in the United States, researchers must file an Investigational New Drug (IND) application with the FDA. An IND application must also be made for clinical evaluation of dietary supplements as agents for the treatment or prevention of disease. The FDA’s IND process is confidential, and the existence of an IND application can be disclosed only by the applicants. To date, no investigator has announced filing an IND application to study either Essiac or Flor•Essence in the treatment of patients with cancer.

Essiac and Flor•Essence are administered orally in the form of herbal teas.[1,11] Reviewed in [4,6,8,9,17] Originally, an extract of one of the herbs (not specified) was given to cancer patients by intramuscular injection at or near tumor sites, and the other herbs were given orally as a tea. Reviewed in [4,8,9,17]

Only minimal information about dose and schedule of administration is freely available from the manufacturer of Essiac.[1] According to the manufacturer, the dose will vary, depending on the reason for ingestion; the manufacturer’s recommended schedules of administration assume a 12-week program of uninterrupted use.[1] Although Essiac is said to be safe for pets, no information is given about its safety in children.[1]

The manufacturer of Flor•Essence states that adults may consume from 30 to 360 mL (i.e., 1-12 fl oz) of Flor•Essence tea a day, depending on individual requirements, and that it may be used on an ongoing basis.[11] The manufacturer also suggests that Flor•Essence may be safely consumed by infants and children, but its use by pregnant women and nursing mothers is not recommended.[11]

The manufacturers of Essiac and Flor•Essence both state these products can be used in conjunction with other

cancer treatments.[1,11] Nonetheless, some proponents of Essiac have recommended that no additional anticancer therapy (such as chemotherapy or radiation therapy) be undertaken while patients are being treated with the mixture. Reviewed in [8] The purported rationale for this recommendation is that conventional anticancer treatments may alter immune system function and prevent Essiac from working effectively. Reviewed in [8] as indicated previously, however, no evidence has been reported in the peer-reviewed, scientific literature to show that Essiac is an effective treatment for patients with cancer.

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While I searched for Mangosteen and Cancer I came across the following web site <http://www.cancertutor.com/>. I didn't get a chance to explore the entire site, but from what I saw it was very informative for anyone who was interested in dealing with cancer by using alternative methods. Actually, anyone who is currently under a medical doctor's care and receiving treatment should also review alternative methods as an adjunct to their current program.

To paraphrase what I had said earlier in this report, **any information obtained from this report is purely for educational and informational purposes only and should be discussed with your physician.**

### **Royal Raymond Rife, Jr. Technology**

I included the following information on the Rife technology because I feel that you should know as much as you can about the various ways and techniques that are available to you regarding your health. If you want to learn more about the Rife Technology just type in "Royal Rife" into any search engine and you will be amazed as to how much information there is regarding his technology.

You will find people selling the Rife frequencies software for \$100.00 or less and machines for as much as \$3,000 and more. After reviewing many sites I settled on the Model A from Wright Laboratories. It is one of the most

affordable and the company offers as much customer support as you would need. I will give you more details later in this report on how you can buy one of their machines and receive a special free bonus.

If you decide to contact Wright Laboratories learn as much as you can through an internet search before you contact them.

### **Has the Greatest Health Discovery in History Been Suppressed?**

Royal Raymond Rife, Jr.

May 16, 1888 - August 11, 1971

Did a revolutionary microscope, invented in the 1920's, reveal a method of curing all types of germ-caused diseases? Can this technology, using radio frequencies, arrest most cancers, and actually cure them? Will this technology stop the dreaded AIDS virus, and halt the spread of Lyme's Disease, Butterfly Lupus, and other so-called "incurable" diseases?

The story of Royal Raymond Rife, genius scientist, can be likened to the most fascinating mystery. The Carl Zeiss Optical Company in Germany trained him for six years. He also worked for the Secret Service, U.S. Government. He became the inventor of powerful microscopes, leading to the discovery of a beneficial phenomenon dealing with viruses.

Rife received the backing of Mr. Timken, of the Timken Roller Bearing Company, who supplied funds to establish a laboratory in San Diego to finance his research.

Rife reasoned that if he was going to find a cure for diseases such as cancer, it was important to be able to see the live virus that caused the disease. In 1920, Royal Rife designed the first of several highly advanced microscopes, recognized as the most powerful in the world, and the only one that could be used to see viruses alive.

Rife's microscopes had resolutions and magnifications far more powerful than others of his day (or even today). Rife's Universal Microscope (1933) magnified 31,000 times; other microscopes of his day magnified only 3,000 times.

But Rife found that making a microscope with extreme magnification was not sufficient to see a colorless virus. Staining them with existing aniline dyes was unsuccessful because the virus was too small to absorb the colloidal particles.

**Rife noted that the different frequencies of light caused certain microorganisms to luminate (light up) in their own resonant colors. So he invented a system of rotating prisms to select the appropriate light frequency (color), essentially staining the specimen with light.**

Extrapolating from this resonant effect of light, he experimented with electromagnetic radio waves and discovered that for each type of virus, there was a particular resonant frequency that would cause it to burst into pieces and be destroyed.

He subjected test animals in his laboratory to lethal doses of pathogenic germs and found that he could invariably save their lives by subjecting their bodies for a few minutes to the electrical energy of the properly chosen frequency. Therefore, before the year 1930, he had built his first microscope and demonstrated that he could electronically kill pathogenic microorganisms.

This success demonstrated that any germ-created disease in man, animal or plant, could be quickly and painlessly eradicated! **This was Electronic Therapy - THE HEALTH TECHNOLOGY OF THE NEXT CENTURY!**

Can anyone imagine a more important discovery for mankind? It insured the virtual end to disease! (And at little cost, we might add.)

A primitive form of this technology is used today by the medical profession to treat certain types of leukemia. The patient's blood is pumped from the body and exposed to ultraviolet light. Unfortunately, this AMA-

approved treatment does not treat the bone marrow, where blood cells originate. Also, it is painful and expensive. Rife's method did access the whole body, inside and out. It electrocuted the viruses and thus cured the so-called "incurable" diseases. Rife's method was totally harmless to the body, and extremely inexpensive.

Rife's success attracted the attention of many doctors and scientists. Dr. Arthur Kendall, a noted bacteriologist, contributed his "K Medium" which enabled the "filterable virus" portions of bacteria to be isolated and to continue reproducing.

Dr. Milbank Johnson was a strong supporter of Rife's work and arranged a dinner in honor of Rife and Kendall, attended by more than 30 of the most prominent people in the medical field.

**Dr. Johnson set up a clinic where Rife treated 16 terminally ill cancer patients with his frequency instruments, and, after 3 months, the staff of 5 medical doctors and Dr. Alvin Foord, M.D., Pathologist for the group, pronounced 14 of the subjects clinically cured.**

Dr. James Couche used Rife's frequency instrument for 22 years with continued success. He reported one case of a Mexican boy with osteomyelitis of the leg. The doctors had to scrape the bone every week, which was painful. After 2 weeks of treatment with the frequency instrument, the boy was completely healed with no reoccurrence.

**RIFE'S DISCOVERY WAS SO REVOLUTIONARY, IT PROMISED TO ELIMINATE ALL GERM-CREATED DISEASE!** And therein lay the basis for the suppression of his marvelous discoveries and inventions. The contributing factors to this suppression were scientific rivalries, institutional arrogance, one-man rule of the AMA, and vested interests of pharmaceutical companies.

**Yet, in the years from 1934 to 1939, many doctors cured cancer, and other diseases using Rife's frequency instruments.** Then, at the end of this period, extreme pressure was brought against the doctors to stop using this method, and their machines were confiscated.

**In 1939, an engineer working with Rife to improve his instrument for commercial manufacture by the newly formed company, Beam Ray, brought suit against the company. This engineer obtained the powerful backing of the AMA, and the ensuing trial had a debilitating effect on Rife, leading eventually to alcoholism and depression. For all practical purposes, his aggressive research was over.**

Two prestigious journals described Rife's revolutionary microscopes: The Journal of the Franklin Institute published an article, "The New Microscopes" in February 1944. The Smithsonian Institution published the same article in its Annual Report of the Board of Regents, year ending June 30, 1944, and republished it in 1945. The text is available in John Crane's book.

In 1950, John Crane became Rife's partner and worked to improve the frequency instrument and to document Rife's work. In 1958, he made a smaller frequency instrument that attached directly to the body. Doctors began using this smaller, lower cost, frequency instrument with success. Again, the health authorities surfaced and threatened the doctors, forcing them to shut down. Crane's office was raided and all machines, documents, and research records were removed, all without a search warrant.

The only way to investigate the Rife technology today is through personal research and experimentation.

## NOTICE

**Due to FDA regulations and various state laws, no medical claims can be made for the Royal R. Rife technology. All of the information expressed herein must be considered theoretical and unproven and for experimental research only.**

## Skeptical about Rife technology?

Great! That probably means you are "our kind" of people. A high degree of skepticism is a good thing, especially today. We welcome your skepticism. If you are skeptical and reading this page at all, you are

probably like so many people who would like to believe in the Rife technology, but you need to have some really well grounded facts before you even open up to a dialog.

The more scientific you are about it, the better you will understand our message. But we are not really here to convince you of anything. Our job in this regard is to give a full disclosure to our users. We don't normally give much time to skeptics, for the reason that, in most cases, once you sit down in front of a really good instrument of this type, you won't be a skeptic anymore.

For what it is worth though, we will offer to you a few of the basic known quantities, in hopes that these will encourage you to call us for more information, or personal counseling.

The first thing is that Rife and his story are real historical events. Our link to the Smithsonian Annual Report for 1944 should prove that. Although not all of the things that have become popular diatribe are factual. Example: Some makers like to emphasize the persecution of Rife and Rife machine manufacturers, and use such exaggerations to create a sense of urgency by implying that it won't be available much longer.

If you have looked at a lot of web sites other than JWLABS, you have probably seen a lot of conflicting information, or plain disinformation. This confuses the important issues, which leads to skepticism in the minds of most reasonable people.

When we were first introduced to the Rife technique, we were skeptical too. In fact, we are among the most skeptical of people, in part because after you have been scammed enough times, you don't quickly accept much of anything, even when the proof is staring you in the face. At that time, (1986), all that Internet rhetoric and mumbo-jumbo, did not exist. We had to figure it out for ourselves.

One of the obvious and best known principals of the Rife technology likens it to shattering a glass with the right musical tones. A hundred years ago, there were probably a lot of people who would have a hard time believing that, unless they could see it for themselves. However, in the modern world, these principals are no longer doubted.

A lesser-known principal of Rife has to do with taking advantage of the difference in strength between virus and bacteria and that of a human cell. The difference can be as much as a million times. Radiation therapy attempts to take advantage of the difference in the strength of a normal human cell and a human cancer cell, which is a very small difference by comparison. The Rife transducer is in part, designed to exploit the difference between human cells and pathogens, by means of current. It only takes a few volts at miniscule amperage, to electrocute almost any pathogen, instantly. JWLABS machines deliver this electrocuting energy, which is at the same time a stimulus to the body, incorporating Rife's Mortal Oscillatory Rates. Even if you have doubts about the MORs, it is very difficult to be skeptical about the effects of microbial electrocution.

Electro-stimulators have been in use by the mainstream medical profession for many years. Their ability to revitalize and to reduce pain, are well established. It is also a matter of historical fact that much of that technology has been built on the work of Dr. Royal Raymond Rife, of San Diego, California.

You may examine additional information by reading our Rife FAQ page, which answers twice as many questions as are most often asked. This should at least take the edges off of your skepticism.

However, legitimate scientific or professional skepticism will probably not be satisfied in the present research environment of Rife technology. Although the theoretical principals of the therapy does not contradict established sciences and cannot be credibly refuted by the basic sciences of Pathology, Chemistry, Pharmacology, and Physics, it is still very often regarded as a fraudulent practice. This is likely due to the preponderance of poor quality devices or the low percentage of genuine instruments that are produced in the US.

It was predictable and inevitable that Rife technology would become popular amongst chiropractors, homeopaths, naturopaths, dentists, nurses, veterinarians, acupuncturists, etc, and this fact also contributes to the aura of the technology in the eyes of medical authority. These practices are often maligned by conventional medicine, not always justifiably. But the efficacy of the Rife technology has often been remarkable and for it to fall into the hands of unethical practitioners has both the effect of increasing the apparent success of otherwise

medically unsuccessful practice, and of placing the technology in the same level of acceptability and credence as the practices in which it is so often used.

The general lack of regulation in some of these practices makes them a haven for quackery, which may be rightly seen as a tool of "calculated neglect" that encourages their vilification by conventional doctors and researchers. Homeopathic drugs, for example, are not subject to the same truth in advertising as conventional drugs, making them more vulnerable to invasion by unethical practitioners and thus attract ridicule unjustly, to those who are both sincere and efficacious. The end result of a lack of reasonable regulation being the appearance that these practices as a whole are a danger to the public, which is not a scientific judgment in the least, but more a means of manipulation of public sentiment.

Lack of reasonable regulation also means that products and equipment that is sold and marketed as Rife technology may be nothing of the sort. There are many false Rife machines, and the promoters of these fall into a spectrum of classifications from outright frauds to the genuinely mistaken. It is also quite common for false Rife machines to adopt all the same words and phrases as are used to describe genuine Rife instruments, making it impossible even for experienced users to determine either the hardware value or efficacy as opposed to price.

Dosages, amplitudes, waveforms, frequencies and session protocols all are without labeling requirements, acceptable standards, or authoritative training. This means that all of these critical factors are subject to arbitrary opinion and must certainly fall under the US House of Representatives definition of quackery, whether they are genuine or false machines and/or practitioners.

Further mass confusion concerning the Rife technology stems from the very fact of its basic truths. The results possible from the use of a very feeble machine is often quite impressive the first time it is used. This is similar to many drugs, where the maximum notable effect occurs upon the first use. The long-term effectiveness of the drug may taper off dramatically thereafter. Such a feeble machine does not display its diminished result and this is not evident to the user until after they have made a purchase. Feeble machines may be adequate to prove the theory, even in a scientific environment, but still fall short of having any real therapeutic or medicinal value. This one time only effect has been enough to convince even the most ardent skeptic and astute scientists and researchers should be aware that these effects are common and misleading.

Rife machines are further stigmatized by a lack of approval compared to the perceived credibility and public acceptance of products that are approved and widely marketed in advertising media. It is the opinion of many drug examiners and approval preparers for drug companies that the present fast track approval process is even more a danger to the public than any snake oil, as evidenced by the mass recalls and withdrawals from the market of well known drugs. In these cases, it is obvious that the approval process is seriously compromised and wholly inadequate. Unlike the use of transducers and Rife machines, which have been in use for as much as a hundred years, new, unproven drugs are approved and placed on the market in as little as 5 months. It is simple logic to realize that until a product has been tested or used for at least 50 years, its long term side effects simply cannot be determined.

There is real doubt of the value of the official approval of Rife machines. Hostile regulation is probably not better than no regulation at all. The motive for regulation is lacking since it is generally accepted that the technology is grandfathered and therefore exempt from conventional regulation. It is subject to fair trade and truthful advertising, however, and The Federal Trade Commission suggests that the technology is not proven. This claim is arguable, since it has been proven many times in many countries, and it is very easily proven when challenged to do so. Such a challenge is not expected, because it is widely understood that the true Rife technique is massively effective, a fact that some of its opponents would prefer did not become public or common knowledge.

### **Frequently Asked Questions**

Here you will find a collection of the most common questions regarding Rife, the machines and the therapy. They are presented in no particular order. If this page does not answer all of your questions, please feel free to call. We answer all calls between 9am and 9pm Pacific time, 7 days a week, including holidays.

## **Why haven't I heard about Rife before?**

There are a number of theories as to exactly what has suppressed the technology over the years. Most of them are exaggerated, glamorized, or simply untrue. What is true is that some people lose track of what they can say about their machines without getting into legal trouble. Others leap to conclusions about what the machines can really do. Occasionally, they run amuck of the law, and then claim they are being treated unfairly, or are being persecuted. When this happens they become overly cautious. So, the answer to this question is that users and manufacturers as well, have developed a tradition of not telling people about it, even when the need is great, purely out of a need for self preservation. Therefore, if you already know about it, it will not be deliberately hidden from you, but if you do not know about it, and do not seek it out, nobody is going to come knocking at your door, or send you unsolicited email. This keeps the profile down. Conventional medicine and other big business are not interested in the technology for the reason that they do not want to invest a lot of capital in a technology that they cannot patent, and cannot exclusively control. In a few cases, however, businessmen and industry have taken a clue from Rife technology, and developed their own, unique interpretations, which can be patented. The TENS unit, which has been approved by the FDA for many years, the bone growth stimulator, also approved are examples of Rife machines that you may have heard about. The Cybersonic, Ionic, Sonic, and other types of advanced tooth brushes are based on fundamental insights taken directly from the Rife technology. Outside of the US, there are many countries that have embraced the advent of frequency therapy. It seems to fall in and out of favor, depending on the administration or regime. This is probably because the technology, if it is done correctly, is fantastically effective, and tends to inhibit some sectors of the medical profession. The drug business is definitely the most obvious of these, but it affects every part of medicine to greater or to lesser degrees. Politics plays a role in the suppression of Rife machines.

## **Will it work for me?**

It depends, in part, on what you are trying to accomplish with the machine. It also depends on whether or not the machine you get is able to do that job, since not all machines are equal. If you expect a limited function device, such as a zapper, or a tens unit to perform as a full function device, you may be disappointed.

There are profound differences between a broadcast device and a transducer, as there are distinct differences between an analog device and a digital device. Of these, only a very few are capable of everything a Rife machine is expected to do.

If the problem you have is something that is incurable, the Rife machine may be your best bet. There are a number of afflictions that can only be treated successfully with a full function instrument. But if all you expect is daily maintenance, lesser machines may do the job quite well. Unfortunately, you might spend thousands of dollars on an instrument that is not able to handle your particular problem, and yet, a simpler and much cheaper device may do the job easily.

Your success with any home remedy may depend on an accurate diagnosis. Once you have that, it helps a whole lot to be well educated about the nature of the problem, what causes it, what the symptoms are, and how it is normally treated.

Where you are located, where you grew up, and your personal habits often determine how difficult it might be to treat a given problem successfully. People who live in big cities often do not respond as well to the therapy as do those who live in remote or isolated regions. So the environment and your living conditions play an important part. This is true for many types of remedy, including the conventional allopathic approach.

Complications to a simple problem, underlying, unrelated problems, especially when they are located in the same general part of the body, contribute to ambiguities in the results you realize. If you contract an infection in unusual way, even if it is a very common infection, might make it very difficult to deal with as compared to the average case. A history of drug use, prescription or otherwise, alcohol, or steroids, usually reduces the chances or slows down your ability to recover, especially if traditional medicine has failed. Very advanced or very long term problems usually do not respond as well as newly contracted or untreated problems of the same type. Knowing exactly why the problem exists helps a great deal.

Conventional testing is the most common way users confirm their results. The therapy should not be used to replace most straight forward medical treatment. Be sure to see a doctor, or a specialist, and be sure to get copies

of any and all records, test results, and X-rays that they routinely keep. The more you know and the more information you have that you can use to compare your problem with recorded cases, the better equipped you are to deal with a problem yourself.

There are very few users who do not do better with a JWLABS machine than they would have without it. Although we are not doctors, we will do everything we know how, to help you. One of the most important things that you can do to assure your success, regardless of the remedy, is to follow the instructions strictly and regularly.

If you use microscopy, or any other testing method, conventional or otherwise, the first thing you will be struck by is the fact that unlike most other therapies, the Rife machine starts working immediately. Amazing changes happen within seconds. Long before the changes are noticeable to you, marked, scientifically observable changes will happen in virtually every user.

This doesn't mean that it will cure you that fast. Normally it takes some time just to become accustomed to the effects that are produced. One case in a hundred does not respond as expected, or not at all. But by carefully examining the facts of the case and the circumstances, the symptoms and other complications, it is usually possible to determine with some degree of reliability, the reason why. If you can figure out why, often there is a way to make it work.

In the treatment of such things as gangrene, usually there is only time for a single treatment. It has to be done at high power, at the right frequencies, for extended session duration. Life and limb have been saved in more than one case, as reported. Influenza can be treated, but prevention by means of regular maintenance sessions is the preferred method, due to the potential for Herxheimer (healing crisis) type reactions. Used in general healing for wounds and broken bones, accelerated healing about twice as fast as normal are typical reports in testimonials. Cancer responds according to the type. Some reports indicate that fast growing, terminal, inoperable tumors have been all but eliminated in 2 weeks. Thickly encapsulated, slow growing, benign tumors may not respond at all. There seems to be no reliable rules in the treatment of cancer. The machine does not kill human cells, and so it does not kill human cancer cells. The treatment is expected to remove the cause of the cancer, unless it is caused by a toxin, asbestos, or radiation. Removal of the cause, will usually bring remission in advanced cases, and may bring a complete cure in less advanced cases. Nothing works if it is simply too late and the systems of the body are already breaking down, as is observed in general systemic failure just prior to the death spiral.

Multiple Sclerosis and Fibromyalgia cases cover the full range from no results, to complete cessation of all symptoms. This has been done in as little as three months, and as long as two years.

In general, the machine works very fast. So fast, that the first few sessions are critical. With an analog, full function, double power instrument such as the ones we make, the first two or three sessions must be done with extreme caution, so as to avoid extreme reactions. Once this danger is past, regular sessions may begin. With lesser machines, the first few sessions may be the only time results are seen. Many people, new users and experienced practitioners alike have been confounded by the vast differences in the efficacy of different makes of Rife instrument and how difficult it is to tell which are good for a lifetime of therapy, and which will only work for a week or two.

### **How dangerous is Rife therapy?**

It is best to use the analogy of the automobile, since most people are familiar with them. As a non user, you have either been walking, or riding your bike. Now you are about to climb into a Ferrari F50, and get out onto a full competition race track. In other words, it is only as dangerous as you are. If you are a foolhardy know-it-all, or have declared yourself an "instant expert" you may very well kill yourself. But you are still going to have to do some very stupid things before you die.

If you are appropriately cautious and take the time to fully understand what you are doing before you put your foot to the floor, you will be fine. But in order for a car to take you down the highway, it must also have the power to take you over a cliff.

Injuries using the transducer are extremely rare however, for a number of important reasons. Obviously, if the machine you have is only capable of treating a quarter of a cubic inch at a time, there is no danger, because the machine is not powerful enough to hurt you. It is also not powerful enough to accomplish much except perhaps to prove that the technology works, even in its most ineffective forms. By contrast, both Model A and Model B have enough power to treat a horse, and can deliver enough current to thoroughly permeate every cell in your body. These devices are also sensitive enough to treat a mouse. Obviously, what is needed to treat the body lies somewhere in between.

One of the built in factors of a transducer that helps prevent injuries is that in order to hurt yourself, you would have to apply enough power to cause pain. So, for the same reason that you never use so much volume when using a headphone that it causes pain and thereby avoid doing harm to your hearing; you will avoid causing pain with the machine. Still, it is possible to do very dangerous things with the machine. For instance, if you were to place the electrodes of the machine over your temples, turn the machine up to maximum, and then switch the machine on, you could do serious harm to yourself. This and other potentially harmful mistakes are things that we are very aware of, and we always like to walk new users through their first few sessions so that we can be sure they get a reasonable understanding of the proper use of the machine.

Without question, the single most prominent of all dangers of the machines we make is the hazard of over use. Although not much of a problem for experienced users, the potential for over use among new users is something that we stress. The machine is not like a drug. It isn't something that you can over dose yourself using. It isn't putting new chemicals into your body and polluting it. Rather, it is going to continue to make changes to the chemicals already in your body, called endergonic reactions. It will continue to do this for as long as you keep using it. Although we always tell people that it is not recommended for systemic sessions more than 30 minutes every three days, many people exceed this. The reason they do, is either they did not believe what we warned them about, or they simply forget how much they have used it. Consider that a completely healthy person might use the machine everyday for an hour day after day, but after about ten days, it will hit them suddenly, and they will develop severe toxic reactions.

For new users, there is a real possibility of undiagnosed infection, which in the extreme case, can have the same effect in a matter of minutes, literally after a single session. The methods we use to prevent this from happening and the sort of sessions that we suggest in the beginning are tailored with this in mind.

If we have scared you, relax. When used properly, the machine is far less dangerous than a hair dryer, a toaster, or an electric razor. It is safe, but not recommended for children. Under the age of 13 must be with adult supervision. Other, more common cautions are included in the operating instruction booklet that comes with the machine. These cautions are covered with each customer verbally before they receive their machine. It is routine for us to interview each customer, to determine if there are any special dangers for that individual, based on their history.

### **Will it make my problems worse?**

No. The machine will not make matters worse. Indirectly, however it is not a good idea to use the machine instead of having the sort of care your doctor suggests. Like using it to avoid a surgical procedure that you need.

For people suffering from viral infections like HIV, or hepatitis, it is best to refrain from using the machine for at least a few days before a viral load test, because using the machine will stir up pathogens, and other measurable blood factors, which is a normal effect of the device that will throw off the results of most tests of this kind. White cells are also brought out, and become much more active. Shattered virus may not be distinguishable from live virus. Increased antigens may appear to indicate changes that are not really correct. This could make it look a lot worse than it really is, and cause the doctor to make incorrect judgments about your condition. You will feel fine, but your doctor may wonder how it is that you are even walking around.

If tests are the means by which you are measuring your progress, just take leave of the machine for three to five days. The debris in your system will have time to clear out completely, and the test will reflect more accurately your true condition.

## **What is a Rife machine anyway?**

The term is something of a misnomer. The technology and techniques we employ in the thing we call Rife therapy, was mostly developed by others. The frequency instrument, in modern times, is actually a home remedy device that incorporates virtually everything that can be done with an electro-medical device.

Royal Rife was a microscopist, (someone who makes and develops microscopes). He is correctly attributed as having discovered what are called Mortal Oscillatory Rates, or, the frequencies that devitalize microbes. That function of the therapy has always been best accomplished with a transducer. An instrument that delivers current to the body that is both a stimulus to the user, but is a destructive force to pathogens of all kinds at the same time. Rife did not invent the transducer. It had been in use a long time before he was born.

The other school of thought is to the effect that it was the Ray Tube that was the true Rife machine, a device that uses a radio wave to deliver frequencies, rather than current. In a way, there is a dramatically correct aspect to this belief, since the transducer could not be used to treat Rife's microscope. This is because they are too powerful. Transducers will generally kill anything that lives on a microscope slide, at any frequency, because it takes so very little current to kill bacteria in a subject of a single drop of liquid, with no resistance at all. What Rife needed was to prove his theory. In order to accomplish this, he needed a frequency applicator that would ONLY kill one type of pathogen when precisely the correct frequency rate was reached, leaving every other type unharmed.

The ray tube was used for this purpose, and it was powered by the frequency instrument. The frequency Instrument *was* the transducer. Of course Rife knew enough about physics to understand that far more energy was needed in order to achieve the same sort of results inside a living body of two hundred pounds or more, where huge resistances would be present. Ray tube promoters were ignorant of these simple facts before they committed to a different paradigm.

Over the years it has been proven that even a very feeble transducer vastly out performs even the most powerful ray tube modalities for the reason that a transducer is direct, and a broadcast ray, is indirect. There are a great many other things that make the transducer a far better method of delivering frequency to the body. The most notable of these is that of the electrocution of pathogens. Something that no non-contacting instrument can do. Obviously, it is far easier to electrocute pathogens than it is to destroy them by frequency alone. Far more reliable as well.

JWLABS machines deliver the mortal rates at an energy output that is also an electrocuting force to virus and bacteria. This makes the effect a lot more reliable and predictable. There are a host of other effects that can be realized using the transducer, and that are not possible in any other way. The Department of Defense verifies this for us in the document, Electro Conformational Coupling, where endergonic reactions induced by oscillating current are described in detail. They include cyclic enzyme catalysis, mitochondrial ATP synthase, and others. There are many others.

In the loose language of the present day, virtually anything that delivers frequency to the body might be called a Rife type device. Although there is literally no better or more powerful way to accomplish this than the transducer, frequency delivery devices have taken many diverse forms, from color therapy to the playing of certain musical instruments.

John Crane, who built machines for Rife for over 20 years, attempted to reveal all of these facts after Rife's death in 1971. His focus was primarily on the fact of microbial electrocution, which Rife never revealed. Even though he knew and had proven its effectiveness, Rife did not openly admit it, again, because he did not invent the transducer. But he did prove it, so the name has stuck

## **What makes your machines better than the others?**

It is far too easy to make unfounded claims on the Internet. We can state that we make the best, but anybody can say that. We have rarely had to answer this question because most of our users have taken the time to research the machines available, and the majority of people who do that much, arrive at the same conclusion. JWLABS makes the best Rife machines.

Like many of the world's top manufacturers, we use contractors whenever we can to save money and to take advantage of their specialized skills. Just the way Henry Ford surrounded himself with experts, we try to employ the best that we can find.

We are motivated to make the very best device that we can. Our equipment carries a "lifetime" warranty. Our customer service policies are such that people may contact us for help and advice so long as they have a JWLABS machine. We anticipate a long term relationship with our customers and they usually have very high expectations. We answer our toll free numbers 12 hours a day, seven days a week. If customers have any problems, they know that they can call us almost any time.

There are not many things in the world that you can buy where the maker has that much faith in their products, or that much genuine interest in the satisfaction of their customers. Not cars, not refrigerators, not furniture, not houses, not even tools. So when we say that we make the best, it is not something we say to impress you, it is something we say because we sincerely believe it.

The machines we make are not easy. Nobody else makes devices anything like JWLABS machines, and nobody else makes a true vacuum tube based instrument, exactly as Rife himself once did. Our Model B is a standard in the industry. Even though Model B is in the public domain, it has almost never been copied because only one in ten qualified electronics engineers can make them successfully. If another company successfully copies Model B, then perhaps there would be a machine that is its equal. but so far, no one has done this. Model B is an expensive instrument. It is very expensive to make. But when it comes to health, there is simply no compromise. There is real doubt that any other machine is made with such a commitment to quality and efficacy.

The true Rife technology might be compared to an airplane. The exact parameters that make a plane fly must be adhered to in all aircraft, because the laws of physics do not change. If it does not have all of the essential elements in the right proportion, it either will not work, be too complicated or it will be too dangerous.

We are not in a hurry. If you doubt what we say, go ahead and buy another. When it does not do the job for you, we will still be here. Take your time. Compare results and hardware, instead of rhetoric. Compare and prove it to yourself so that you can be as sure of what we are doing as we are.

### **How do you avoid the FDA?**

We don't. And neither should you. We cannot give legal advice, but it is our opinion that so long as what you are doing does not infringe on the domains of conventional medicine, and you are not misleading people in your presentations, you should have nothing to fear of the FDA

### **How can I use this in my medical practice?**

Most conventional doctors can't. They are constrained by the rules of the AMA, and other local and state laws, which pretty much forbid anything that is not approved.

Other types of practices may be far less restricted however, and the technology is allowed in most other countries.

For those not in the medical field, there are no restrictions, but what you say about the therapy, and how it is presented, makes all the difference. If you have any doubts at all, the Model A was designed with this problem in mind. Model A may be used in a very special way that is non medical, and can be used and presented as entertainment.

### **How can I introduce this to my friends without looking like a nut?**

Once you have a good understanding of what the machine can do, and you have used it yourself for a while, you may face a dilemma that many JWLABS users eventually must come to grips with. How do you give this vital knowledge to people you know have a need? Unfortunately, unless your friends have indicated an active interest in alternative remedies, they will probably not listen to you anyway.

It can be very difficult or impossible to talk someone into it, especially if they do not have any problem that seems hopeless to them. Nevertheless, many of us feel compelled to try. This is where Model A can be a great help.

JWLABS Model A is able to instantaneously convert almost any audio signal into a therapeutic spectral output. In other words, when music from a media device is input, Model A will turn part of that signal into tactile music. Tactile music is music therapy, and although it is entertainment in that form, it will amplify all of the aspects of music that we find enjoyable many, many times. It's fun. It's harmless, it feels terrific, and it is totally non medical in nature. Even so, if the Rife therapy can help them, they will likely notice a minor, positive change in their condition. In this way Model A provides an innocuous means of introducing people to the benefits of the therapy, without having to spend a lot of time explaining things. If it helps them, they will likely want more. If they get curious about it, they will start asking questions

### **Does the US government know about Rife machines?**

Absolutely. And, it is fairly well known around the world. We gave the technology to the Department of Defense back in 1989. They responded very positively. But don't worry. Their interest was primarily in the medical aspects of the technology. It does not lend itself to being made into a weapon. Rife technology, in its true form, does not use any frequencies that can be harmful to the body or that have the capacity to kill human cells.

Go to our **TECH STUFF** link, for more technical information about the basic physics of Rife machines. (I included the Tech Stuff information at the end of the question and answer section.)

### **How much does it cost?**

The true cost of any Rife machine, provided it works, is very small if you calculate what it saves you, and how long it takes to pay for itself in this way. The cost of operation in electricity or in batteries is insignificant.

There are some very wide disparities between the price of machines of various manufacture, and their effective value. If the machine is nothing more than a modified function generator, it is worth a few hundred dollars, and will usually produce 10 to 20 percent of Rife's original effectiveness. These are going to take much longer to perform the same task as a more efficient machine, so if you have to pay thousands of dollars for it, it is very expensive in more ways than just price. Compare to a common \$59 zapper, even with only 2 percent of the effectiveness it is a good value for what you pay.

Digitally controlled instruments will not be able to achieve frequencies in fine enough increments for a lot of the applications, and again, fall far short of the mark. Prices for these types are fair between \$200 and \$600, with efficacy about 20 to 30 percent of Rife's original machines.

Machines that are not scratch built by the manufacturer, such as modified function generators, are contraptions composed of two or three off the shelf units that are cabled together. A function generator, an amplifier, and in some cases, a CB radio. The cost of the hardware for a contraption usually exceeds its effective value by two or three times. All such machines are at the hobbyist level, and are appropriate for the user who would like to make his own, given a smattering of electronics knowledge.

Past the "tinkerer" stage, scratch built, independently engineered machines might still be made in a garage somewhere. This is the device that starts with a function generator chip, and the machine is designed around that. These are usually better because at least the maker is serious about it, and is usually really trying to do a good job. A fair amount of physics is required as well as electronics, and must be blended to achieve the correct parameters, assuming they know them.

Unfortunately, the efficacy of home built machines start at only 2 percent of the original, and may be more depending on what the maker actually knows. A bottom line hardware plus labor cost for garage built machines should be \$300 to \$500. It should be noted that most home made machines have not endured the test of time, and are not subjected to quality control as professionally manufactured devices must be. But they can be a good

value, provided the maker is doing it for love and not money. Most home made devices are sold at cost, so you would expect to pay \$500 to \$1000, but efficacy will be a gamble.

When weighing the values versus the prices of zappers, home made or hobbyist machines which get much above a few hundred dollars, the prospective user is normally better off obtaining a TENS unit by prescription from their doctor.

The Transcutaneous Electrical Neural Stimulator, is based on Rife technology, and is approved, well tested, and readily available. These may be covered by medical insurance and purchased very inexpensively, with little or no risk. Designed primarily for pain relief, the TENS unit is a limited function Rife instrument, which actually has many more applications than it was approved for. Many JWLABS customers have taken this route before buying a full function Rife machine. This allows them to become familiar with the basic technique, and to safely determine if the Rife machine is a necessary next step, if the TENS device turns out not to be enough to get the job done.

Like any unregulated business, there is a certain undesirable element that operates on the PT Barnum theory that "there is a sucker born every minute". Users who have no experience with Rife technology need to be extremely cautious, recognizing that they have not yet acquired the knowledge to judge quality and value for themselves. Even amongst those who have been experimenting with various types of Rife device for many years, are still sometimes fooled by clever marketing and unfounded or unrealistic claims.

Top quality Rife instruments have been able to accomplish amazing things and this is the truth. But the majority of those accomplishments were not done with home made contraptions, zappers or digital imitations. So, it is not appropriate for makers of such devices to claim equal efficacy, or to site the achievements of devices that vastly exceed anything lesser machines can do. This would be like pointing out that the world land speed record exceeds the sound barrier; therefore you should pay the same price for a motorized skateboard. There are similarities, but they are obviously not capable of the same performance. Again, buyers beware.

### **Can it treat more than one person at a time?**

Both JWLABS Model A and Model B can treat two people at once, but the circumstances of this type of use are fairly specific. Normally, it is only appropriate for one person to use the machine at any one time.

One of the selling points of broadcast type machines which are copies of Rife's Ray Tube applicator is that it can be placed in a room full of people. Rife never used the Ray Tube in this way, for a number of important reasons.

It is our experience that broadcast machines are not appropriate for Rife therapy, as they were intended only to treat the microscope, in the pursuit of proof for the theory of frequency. These "ray" machines use a carrier wave, (AM radio broadcast wave) either producing microwave, or the harmonics of microwave, which can kill human cells, and kills brain cells most readily. These machines may produce some limited effect, but the risks greatly exceed the limited potential benefits they are capable of.

Rife used the frequency Instrument (the transducer) for therapy, which by design cannot kill human cells.

### **Tech Stuff - JWLABS technology**

This is by no means intended to be a technical manual on Rife technology. The purpose of this page is to attempt to explain in simple terms, some of the questions laypersons rarely know to ask. For more common questions, please visit our Rife FAQ.

Probably the main issue we should discuss has to do with value versus hardware. Rife machine hardware, meaning the components that go into it, needs to be adequate to do the job, but nothing should be added to the machine that is not actually required. So you will never see meaningless modalities on any JWLABS instrument that are intended merely to impress or to make the machine appear to have more value than it actually has. There are no exotic applicators that have any more valid efficacy, than those provided.

An examination of the long evolution of applicator technology will reveal that the means of delivering current to the body has gone through many changes over the one hundred year history of the technology.

Until medical quality electrode patches were invented, the means of application were crude and fairly limited. For the first fifty years, steel plates for the feet to stand on, and metal rods for the hands to grip, were about as good as could be expected. Though horribly inadequate, this was what Rife used from the earliest days. But these were only one step ahead of attaching wires to bolts installed in your neck!

Even today, would be Rife manufacturers use the rods and plates, and although it is one of the authentic ways, this method has been obsolete for many years.

There are various other experimental applicators, but these are mostly for show and do not actually add anything new to the therapy. So, it is a waste of money, if you pay more just for that.

The machine that uses less hardware, without sacrificing any of the output quality, makes it possible for more people to enjoy the benefits, because this makes the same therapy less expensive. This is not very easily done. Although we have finally achieved this with our Model A, it has taken decades to develop and test, and the machine has had to go through many different embodiments at great cost. We are satisfied now; that our new Model A can do everything our Model B can do therapeutically.

Another technical issue has to do with analog versus digital. Digital accuracy is certainly greater than is possible with analog, but it is the wrong sort of accuracy. The minor variations that are characteristic of an analog device must be simulated digitally, using still more complex hardware, in order for it to approximate analog. Of course, Rife never used anything digital, and the frequency tuning of most digital machines leaves a great deal to be desired. Unless a digital machine employs very complex programs, there are many frequencies that it will simply never be able to achieve properly, because it is effectively impossible to digitally simulate the perfectly smooth gradients of tuning that are inherent to an analog device of far less complexity.

In other words, if an analog device can split a single hertz into billionths, simply by turning a dial, a single hertz simulated at that level digitally would require at least a gigabyte of information. Multiply that by the ten thousand hertz that are traditionally used in the therapy, would require ten terabytes or about six modern PCs computers, loaded to the gills, to equal it digitally. Not impossible, but still a lot more than is feasible or affordable with the present state of digital programming technology. Again, this is easily achieved in analog by means of a series of simple potentiometers, albeit not cheap ones.

A common issue has to do with output power. There are limits to the amount of current energy the body can comfortably tolerate without harm. It has long been known that lower frequencies require far less energy to deliver effectively, because the amount of deliverable frequency power, or signal, than can be delivered drops off exponentially the higher the frequency that is used. For this and for other reasons, the lower frequencies are proportionally safer than higher ranges because they require far less electrical potential to drive them.

Frequency, harmonics, and resonance are often brought up as arguable points. Harmonics and resonances are not generated by digital technology, so digital will not be considered in this argument.

Rife discovered the importance of frequency when he found that microorganisms can be viewed in their native colors. He did this through the use of a series of prisms, and arrived at a system that could polarize the light spectrum for this purpose. In the strictest sense, these are the true native frequencies of the various microorganisms. But the frequencies of light can only be easily expressed by scientific notation, because they are so high. When he exposed them to the precise frequencies of light under the microscope, obviously, the microbes did not die, because the amount of deliverable energy by means of light is insignificant and far below the level that is needed to destroy them. So, he was forced by practicality, to translate these light frequencies down the spectrum, to lower frequency ranges, so that enough energy could be safely delivered.

One of the ranges that will do the job is the radio transmission range. These are frequencies measured in megahertz, or millions of cycles per second. This range turned out to be ideal for treatment of the microscope, and will only destroy microbes when the precise frequency is achieved.

The big drawback of using radio waves to kill pathogens is that microwave begins as low as 33 megahertz.

Unshielded microwave energy, obviously, is not desirable in any therapy instrument for the reason that it will kill off human cells just as readily as it can kill germs. Human brain cells are especially susceptible, as are certain nerves and tissues of the eye.

So, in order to make an instrument that will not do the user any harm, only the audio range is safe. The audio range is about the same as that of a piano. You can listen to a piano all day long and it will not harm you in the slightest way, in fact, music has other plainly observable therapeutic value all by its self.

The resonances of a signal are really overtones and undertones, just as they are observable on the piano. When you hit middle C, both high C and low C resonate. It is by this means that the mortal oscillatory rates actually work. Audio does not use the native frequencies of a microbe; they employ the resonances that are sympathetically generated. But resonance does not occur in the machine, they occur in the body. Also the same in a piano, it is not middle C that resonates when you press it, it is the other components of the piano that resonate.

Harmonics is what happens when you hit two piano keys at once. You do not get either frequency; instead, you get the harmonic frequency that is generated by the combined tones. For this reason, multiple signal generators are nonsense. If you introduce two different signals into the body, you will only get the harmonics they create, and thus you will never know what the effective frequency actually is that you are getting. In the worst case, the harmonics will reach frequencies approaching microwave.

Waveform. There are some very simple reasons why the only waveform a true Rife machine generates is a square wave. Introducing frequency into the body is like trying to play the piano underwater. The signal will be muted and sound very muffled. This is because as the waves of energy pass through the water, they are eroded by the natural kinetic resistance of the water. The Rife machine has a much more difficult medium to penetrate, and it is far more difficult to deliver the correct, coherent signal to the deepest tissues. The body has a lot of resistance and muffles the signal very rapidly. Literally, the signal flattens out the farther it travels in the medium of the body. In order to compensate for this, the square wave is used because it has the most total signal and so will maintain the frequency much farther through the medium than any other type of signal. The argument is that Rife used a sine wave. That is more correct than is immediately apparent. The instant a square wave enters the body; it is converted by the resistance of the body, into a sine wave. If you introduce a sine wave, it instantly goes flat, and does not deliver any frequency information/potential at all. This is true with all other waveforms as well, except a square wave.

We hope this clears up some of the technical questions you may have.

To contact Wright Laboratories call their Custom Service Department: **1-888-891-1122**

As of the writing of this report the **Model A** was selling for \$880.00. If you purchase the **Model A** be sure to mention my name, **Thomas Ciraulo**, to receive a **FREE 2-Hour CD (\$45.00 value) of your choice** You can choose your free bonus from over 70 different topics. You can get the full list by contacting Wright Laboratories. Here is a sample of the topics that are offered:

<b>Allergies</b>	<b>Diabetes</b>	<b>Pain</b>
<b>Arteriosclerosis</b>	<b>Headaches</b>	<b>Parasites</b>
<b>Asthma</b>	<b>Heart</b>	<b>Parkinson's Disease</b>
<b>Arthritis (Osteo &amp; Rheumatoid)</b>	<b>High Blood Pressure</b>	<b>Prostate (general)</b>
<b>Cancer (general)</b>	<b>Leukemia</b>	<b>Sinuses</b>
<b>Candida</b>	<b>Lyme</b>	<b>Stones (kidney, gall bladder)</b>
<b>Cataracts</b>	<b>Menstrual Cramps</b>	<b>Viruses (general)</b>
<b>Colds/Influenza</b>	<b>Multiple Sclerosis</b>	
<b>Depression</b>	<b>Muscular Dystrophy</b>	

The following story was printed from **FindArticles.com**, located at [http://www.findarticles.com/Natural Health](http://www.findarticles.com/NaturalHealth), Jan, 1999

I found this article by Sara Fremerman, which I believe would be very helpful for you.

### **13 Ways to Prevent Breast Cancer.**

Author/s: Sarah Fremerman

## **YOU HAVE A 1-IN-8 CHANCE OF DEVELOPING BREAST CANCER IN YOUR LIFE. THIS PLAN SHOULD CHANGE THOSE ODDS.**

WOMEN KNOW THE NUMBERS all too well--1 in 8. They show up every time we read about breast cancer or hear about some new drug that's supposed to cut the odds. But a woman's chances of getting breast cancer in her lifetime, in spite of new drugs and the millions poured into research, aren't shrinking.

Theories abound for ways to improve the odds--take Tamoxifen, exercise regularly, take antioxidants, don't live near toxic waste sites, even have a preventive mastectomy. Some make sense and could help; others seem far-fetched or even barbaric.

Natural Health has consulted five breast cancer experts, both those from the conventional fold and others more alternative in their approach, and asked them to help us build a program that would significantly lower your risk of getting the disease. The centerpiece of this plan is diet. It's the one thing you have direct control over. And, according to Mitchell Gaynor, M.D., director of medical oncology and integrative medicine at Strang Cancer Prevention Center in Manhattan, it has proven to be the most effective way to reduce your risk.

Other important suggestions about such things as exercise and going braless appear in "Cancer Dos and Don'ts" on page 95. But first, here are 13 simple ways you can redesign your diet and start protecting yourself today.

### **1 SAVOR SEAWEED**

#### **WHAT TO DO**

Eat seaweeds such as kelp and nori often. Or consider taking blue-green algae such as spirulina (1 heaping teaspoon) and chlorella (3 g) in a glass of juice daily.

#### **WHY**

\* Jane Teas, Ph.D., of the Harvard School of Public Health found that rats fed kelp had less breast cancer than rats that were not fed kelp. The high consumption of kelp may explain the lower incidence of breast cancer among Japanese women (who have one-third the risk of breast cancer of American women).

\* Kelp, chlorella, and spirulina contain chlorophyll, which studies have shown to have anti-carcinogenic effects, as well as vitamin C and carotenoids, which fight free radicals.

### **2 HALVE THE FAT**

#### **WHAT TO DO**

Limit your daily fat intake to 20 percent of your overall caloric intake.

#### **WHY**

\* A diet high in fat (especially animal fat) is known to increase the risk of breast cancer. One study found that the risk of breast cancer increases for Japanese women who move from Japan (where daily fat intake is about 20 percent of total calories) to the United States (where daily fat intake is about 40 percent of total calories).

\* According to Charles Simone, M.D., author of Breast Health (Avery Publishing Group, 1995), a high-fat diet produces chemicals in the intestine that bacteria convert to carcinogenic estrogens. These estrogens can then be stored in the fatty tissue of the breast, making cells in this area more susceptible to cancer growth.

### **3 PILE ON THE FIBER**

## **WHAT TO DO**

Get plenty of fiber from foods such as fruits and vegetables, beans, and whole grains.

### **WHY**

\* Robert Arnot, M.D., author of *The Breast Cancer Prevention Diet* (Little, Brown and Company, 1998) says that fiber interrupts the body's metabolism of estrogen and decreases the blood levels of estrogen. High levels of estrogen in the bloodstream correspond to a higher risk of breast cancer. High-fiber diets can decrease breast cancer risk by up to 54 percent.

## **4 Crunch Cruciferous Veggies**

### **WHAT TO DO**

Consume plenty of cruciferous vegetables--broccoli, Brussels sprouts, cabbage, turnips, bok choy, kale, and cauliflower. Steam them or eat them raw to best preserve their cancer-fighting nutrients.

### **WHY**

\* Cruciferous vegetables contain sulfurous compounds called indoles, which help eliminate estrogen from the body and prevent it from triggering the growth of breast cancer. According to Gaynor, author of *Dr. Gaynor's Cancer Prevention Program* (Kensington Books, 1999), only cruciferous vegetables are known to convert estrogen in the body from cancer-promoting forms to forms that actually protect against breast cancer. One particular indole, indole-3-carbinol (I3C), inhibits the development of potentially cancerous cells in the breast.

## **5 GO FISH FOR FATTY ACIDS**

### **WHAT TO DO**

Eat at least three servings a week of cold-water fish such as tuna, salmon, halibut, mackerel, haddock, cod, and sardines. If you don't eat fish, you can also take fish oil capsules (2 to 10 g a day) or vegetarian supplements of algae-derived docosahexaenoic acid (300 mg daily).

### **WHY**

\* Omega-3 oils inhibit the effects of the compounds known as prostaglandins, which have been associated with the inflammation that suppresses the immune system's ability to identify tumors.

\* In one major British study, researchers examined mortality data for breast and colorectal cancer in 24 European countries. A high consumption of animal fat was linked to more cases of cancer, while a higher consumption of fish and fish oil was linked to fewer cases of cancer.

\* In a study from Finland, women with breast cancer were found to have lower levels of EPA and DHA, two omega-3 fatty acids, in their breast tissue than women with benign fibrocystic breast disease.

\* North American Eskimo women, who eat a diet extremely rich in omega-3 oils, have no breast cancer at all.

## **6 Learn the Soy Secret**

### **WHAT TO DO**

Eat soy products such as tofu, miso, and tempeh regularly. (All soy products are not equally beneficial. Highly refined soy products, such as soymilk, soy burgers, and fake meats, contain much less genistein than traditional Asian soy products, and some may contain artificial preservatives. Soy oils and soy sauce are not good sources either: Soy oils contain unhealthy fats, and soy sauce is high in sodium.)

## **WHY**

\* Soybeans and other soy products contain genistein, a natural plant estrogen that binds to receptors in the breast, making it impossible for potentially cancer-causing forms of estrogen to connect with breast cells.

\* Scientists are also investigating other benefits of soybeans. In one study, Seventh Day Adventist women, vegetarians who typically ate a lot of soy, were found to have a lower-than-normal risk of breast cancer. This may be because they have higher levels of the hormone DHEA, which is higher in women who are free of breast cancer.

\* Gaynor says, "Soy does so many things--it is a weak estrogen that blocks estrogen receptors, decreases angiogenesis [the development of blood vessels that feed a tumor], increases apoptosis [cancer cell death], and contains enzymes that break down carcinogens in the body."

## **7 STOP AND SHOP ORGANIC**

### **WHAT TO DO**

Whenever possible buy organic food: fruits, vegetables, grains, dairy products, meat, and poultry.

### **WHY**

Organic produce is free of pesticides such as DDT and other environmental toxins that have been linked to a higher risk of breast cancer. Though DDT is banned in the United States, American manufactures export the pesticide to Third World countries, which often export tropical or out-of-season produce back to the United States. According to Devra Lee Davis, Ph.D., M.P.H., of the World Research Institute in Washington, D.C., organic fruits and vegetables contain higher levels of vitamins and minerals than nonorganic produce.

\* Dairy products and meats that have been certified organic are free of (artificial) hormones like bovine growth hormone, a chemical fed to cows that has been shown to promote the growth of breast cancer cells.

## **8 STOCK UP ON SUPPLEMENTS**

### **WHAT TO DO**

Every day drink one cup of astragalus tea; take 200 mcg selenium; 30 to 100 mg of coenzyme [Q.sub.10]; 25 mg of grapeseed extract; 30 to 100 mg alpha lipoic acid; and a good multivitamin and mineral supplement.

### **WHY**

\* Astragalus. A 1990 study conducted at the M.D. Anderson Cancer Center in Houston found that taking astragalus daily increased the body's ability to kill cancer cells by tenfold.

\* Selenium. A study by Larry Clark, Ph.D, M.P.H., associate professor at the University of Arizona showed that taking selenium could halve cancer rates, and an earlier study published in *Holistic Medicine* in 1989 concluded that the higher the blood selenium level, the lower the rate of breast cancer. Buy the organic form of selenium, selenomethionine, rather than selenite (the inorganic form).

\* Co[Q.sub.10]. This nutrient protects against cancer by strengthening the immune system and zapping free radicals. However, there is no data that links Co[Q.sub.10] specifically to breast cancer prevention.

\* Grapeseed extract. According to Gaynor, studies have shown that this antioxidant is 20 times more powerful than vitamin C and 50 times more powerful than vitamin E at scavenging free radicals.

\* Alpha lipoic acid. This powerful antioxidant strengthens and regenerates other antioxidants in the body, especially vitamin E. Biochemist Richard Passwater, Ph.D., suggests that lipoic acid may even inhibit the activation of the gene that triggers cancer growth in cells.

## **9 MAKE THE MOST OF MUSHROOMS**

### **WHAT TO DO**

Regularly include medicinal mushrooms, especially the Japanese varieties maitake and shiitake, in your diet.

Reishi, another medicinal mushroom, is slightly tough when cooked so you may want to buy it as a tea, tincture, or capsule.

## **WHY**

\* Studies have shown that maitake mushrooms stimulate immune function and also inhibit tumor growth. "Maitake D-fraction, the active ingredient in maitake, does not kill cancer cells directly," explains Cun Zhuang, Ph.D., who researches the anti-cancer effects of maitake. "It activates the immune system." According to Zhuang, maitake mushrooms have been shown to be particularly effective in protecting against breast cancer in mice. Some evidence suggests that maitake is effective against tumors in humans as well.

\* Shiitake contains the polysaccharide called lentinan, which is known to boost the activity of the immune system.

\* Reishi also contains polysaccharides.

## **10 THROW TEA PARTIES**

### **WHAT TO DO**

Drink one cup of green tea three times a day. Green tea contains about half the caffeine of coffee--you can also buy decaffeinated green tea bags or try green tea capsules or tinctures.

### **WHY**

\* Green tea contains cancer-fighting antioxidants and polyphenols, which reduce the damage done by free radicals.

\* In one study of women, drinking a lot of green tea--10 cups per day--significantly lowered the risk of cancer. Green tea may be another important protective factor responsible for the low rates of breast cancer among Japanese women.

## **11 CHOOSE THE RIGHT OILS**

### **WHAT TO DO**

Cook with virgin or extra-virgin olive oil. And use flaxseed oil in dishes that aren't heated (flaxseed oil is volatile and its chemical makeup is changed when it's exposed to light and heat). Avoid canola oil, safflower oil, corn oil, soybean oil, sesame oil, and margarine.

### **WHY**

\* Monounsaturated oils such as olive oil have been linked with lower rates of cancer. A study of women in Spain demonstrated a lower risk of breast cancer in those who were consuming the most olive oil. Lilian Thompson, Ph.D., a professor of nutritional sciences at the University of Toronto, has found that a daily dose of flaxseed (1 tablespoon of oil or 3 tablespoons of seeds) can actually reduce breast cancer tumor size.

\* Trans fats (denser fats, also called hydrogenated oils, found in margarine, for example) are linked with higher rates of cancer. A University of North Carolina study in 1997 confirmed a correlation between the consumption of the Trans fats in processed margarines and vegetable oils with an increase in breast cancer.

\* Saturated fats (such as those in dairy products and red meat) cause the body to produce higher-than-normal levels of insulin, according to Arnot. Like certain types of estrogen, high levels of insulin can stimulate cancer cell growth in the breast. In a recent study, Pamela Goodwin, M.D., an associate professor at the University of Toronto, found a 283 percent increased risk of breast cancer in women with high insulin levels.

## **12 BEFRIEND PHYTONUTRIENTS**

### **WHAT TO DO**

Eat a wide variety of vegetables, fruits, grains, seeds, nuts, and legumes.

## **WHY**

\* These foods contain phytonutrients (plant nutrients such as polyphenols); compounds that protect against cellular damage and inhibit cancer growth. In one Harvard School of Public Health study, women who ate the most vegetables had a 48 percent lower incidence of breast cancer than those who ate the least; those who ate the most fruit had a 32 percent lower incidence than those who ate less fruit.

\* Health researcher Robin Keuneke, author of *Total Breast Health* (Kensington Books, 1998), suggests cooking with herbs such as dill, which contains limonene, a phytochemical important for breast protection, and rosemary, which has antioxidant and anti-tumor properties.

## **13 EAT AN ALLIUM A DAY**

### **WHAT TO DO**

Eat plenty of allium vegetables--garlic, onions, leeks, and shallots. For optimal benefits (if you're brave), eat alliums raw.

### **WHY**

\* According to the National Cancer Institute, garlic is one of the best foods for protection against cancer. It contains the anti-cancer mineral selenium, which stimulates white blood cell production and induces apoptosis (cancer cell death).

\* Onions and other allium vegetables offer similar therapeutic effects--alliums contain compounds that stimulate the production of enzymes that neutralize the free radicals linked with cancer. Alliums also contain saponins, which prevent cancer cells from multiplying.

\* John Milner, Ph.D., head of the nutrition department at Pennsylvania State University used an aged garlic extract to successfully prevent the development of breast cancer tumors in rats exposed to carcinogens. Of the rats that received no garlic extract, 90 percent developed tumors. Only 35 percent of the garlic group developed tumors. And a 1995 study in *Oncology Reports* showed that the sulfur compounds in garlic extract inhibited the growth of precancerous human breast cells, and increased levels of an important detoxifying enzyme.

## **CANCER DOS AND DON'TS**

### **DO**

Get 4 hours of vigorous aerobic exercise a week. A study of 1,000 women showed that those who exercised 3.8 hours or more a week had less than half the rate of breast cancer of those who didn't exercise.

Stay within 12 pounds of your ideal body weight. In many studies, obesity has been correlated with a higher risk of breast cancer. Excess body fat produces estrogen, which can then be stored in breast tissue and trigger the growth of cancer cells.

Breast-feed infants. Breast-feeding interrupts ovulation and as such is thought to reduce the amount of time estrogen circulates in the body.

Go braless for a few hours each day. In *Dressed to Kill: The Link Between Breast Cancer and Bras*, (Avery Publishing Group, 1995), authors Sydney Ross Singer, Ph.D., and Soma Grismaijer found that women who wore a bra more than 12 hours a day had a 19 times greater risk of breast cancer than those who wore a bra fewer than 12 hours. The scientific credibility of this finding is still being debated.

Sleep in total darkness. Light inhibits your body's production of the hormone melatonin, and lower levels of melatonin have been correlated with a higher risk of breast cancer.

Spend time in the sunshine--15 minutes a day, 3 times a week. Sunlight helps the body to produce vitamin D, which has been linked to lower breast cancer rates.

Use hormone replacement therapy with caution. Some researchers link supplementation with DHEA and other hormones with an increased risk of breast cancer, though no conclusive information is available yet. Check with your doctor before embarking on any hormone replacement program.

## **DON'T**

Drink excessive amounts of alcohol. According to Simone, women who have 2 to 4 alcoholic drinks per week have a 2 to 3 times higher risk of developing breast cancer than those who don't.

Use dark hair dyes for several years continuously. A 1980 study showed that women who dyed their hair to change its color (rather than to camouflage gray) were at a three times greater risk for breast cancer.

Smoke. One study of close to 85,000 women showed a higher risk of breast cancer in smokers than in nonsmokers.

## **SOME AGE-OLD ADVICE**

Pre-pubescent girls: Eating plenty of organic yogurt at this age can reduce the risk of breast cancer by half, according to a study in the International Journal of Immunotherapy

Teens: Strenuous exercise during adolescence lowers the risk of breast cancer later in life. If possible, avoid taking birth control pills--they increase the risk of breast cancer later. Begin monthly self-exams. Express feelings openly--talk out problems as they arise.

20s and 30s: Ideally the pill should be used for a prolonged period after the birth of a woman's first child. Having a child before the age of 35 lowers your risk of breast cancer.

40s: Experts disagree about whether it is necessary to get a baseline mammogram in your 40s. Check with your doctor. At this stage, doing a monthly breast self-exam is crucial.

50s and up: Get annual mammograms. Between the ages of 51 and 70, increase your daily dose of vitamin D to 400 IU. If you are 71 or older, you should be taking 600 IU per day.

## **RELATED ARTICLE: The Protective Mind**

CERTAINLY OUR MINDS and emotions play a pivotal role in the prevention, recurrence, and remission of breast cancer. One recent study in the Journal of the National Cancer Institute reported that following breast cancer surgery, women showing the worst signs of stress and depression also experienced the most profound suppression of their immune systems.

In response to findings like this, cancer specialists like Jeremy Geffen, M.D., founder of the Geffen Cancer Center in Vero Beach, Fla., are addressing not only the physical, but also the spiritual aspects by combining conventional medicine with meditation, yoga, and massage.

The following are a few resources to help you use your mind to protect yourself from breast cancer.

The Center for Mind-Body Medicine. Phone: 202-966-7338. Web address: <http://www.healthy.net/cmbm>.

The Geffen Cancer Center. Phone: 561-770-5800. Web address: <http://www.geffencenter.com/> Stress Reduction Clinic at the University of Massachusetts Medical Center. Phone 508-856-2656.

Rituals of Healing: Using Imagery for Health and Wellness by Jeanne Achterberg, Ph.D. (Bantam Doubleday Dell, 1994).-**Sarah Fremerman is a frequent contributor to Natural Health.**

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Some of you may have heard of the potential beneficial effects of apricot seeds for cancer. I found some information on the Internet recently that I felt you should know about, Apricot pits with vitamin B17 and their potential benefits in dealing with cancer.

For those of you who surf the Internet, there are many places where you could buy apricot pits I saw them being sold for as low as \$16.95 for two pounds to as much as \$25.00 for one pound.

Whether you have a computer or not, you should first check with your local health food store to compare prices.

Before you run out and buy them I would like you to read the following:

### **Apricot Seed Fact Sheet** (*Prunus armeniaca*)

**Description**-Apricot seeds are used by Chinese herbalists to relieve bronchial problems. These seeds also known as bitter almonds are believed to serve as an expectorant and also help to stop coughing. In addition apricot seeds may act as a laxative. In traditional Chinese medicine, apricot seeds are classified as bitter and slightly warm.

**How It May Benefit You...** coughing and wheezing, bronchitis, asthma, emphysema, constipation.

**Caution:** If you have too much you may experience dizziness, nausea, vomiting, and headache and this can lead to more fatal symptoms and death.

**WARNING:** This herb contains a poisonous substance and should only be used under the supervision of an experienced herbalist.

Chinese medicine practitioners have advised using extreme caution in using apricot seeds to treat children or patients with diarrhea. **Some Chinese medicine practitioners believe that apricot seeds should not be taken with the herbs - astragalus, skullcap, or kudzu root.**

I went to Yahoo and typed "apricot pits" and found many sites with information about Vitamin B17. After reading the following excerpt, I feel that eating apricot pits would be an inexpensive way to potentially avoid and or beneficially deal with cancer.

Now that you know of the cautions, here is some information on why you may want to eat apricot pits. There are some who believe that one of the reasons for cancer is the lack of a vitamin called B17, which can be found in apricot pits. Here is an excerpt from the book, *Alternative Cancer Cures: The Nature of Cancer* by Dr. Ernest T. Krebs Jr.:

"It is certainly a pleasure to be here at the Second Annual Convention of the Cancer Control Society, an outgrowth, as you know, of the International Association of Cancer Victims and Friends.

As I look back through the years marketing the emergence of these two fine Societies, I can recall the number of miraculous victories we have had in those intervening years; that it is as true today as it was eleven years ago that Laetrile, Vitamin B17, is the first and last final hope in the prophylaxis in therapy of cancer in man and animals. The reason for this is that Laetrile is a vitamin. It is the 17th of the B vitamins.

We hear a great deal about its use in terminal cancer, but the time to start with vitamin B17 is now before the disease become clinical. The time to start is the same with any matter of adequate nutrition and that is right now. You may start now by commencing to eat the seeds of all common fruits that you eat. The apricot and peach seed contain almost 2 percent of vitamin B17 by weight. The apple seed, although very small, is equally rich in Vitamin B17. So are the seeds of prunes, plums, cherries, and nectarines. The only common fruit on the hemisphere that lacks nitrilosidic seeds, are the citrus fruits. This lack has come about by artificial cultivation by breeding and hybridization, since the seeds of citrus fruits on the African continent still contain Vitamin B17.

Two more rich sources of Vitamin B17 are the simple cereal millet and buckwheat. Macadamia nuts, although expensive and exotic, are very rich in Vitamin B17 and so are bamboo shoots, mung beans, lima beans, butter beans and certain strains of garden peas. But for convenience, the simple source for your Vitamin B17 are the seeds of the common fruit.

We know something about the prophylactic dose of Vitamin B17. For example, we know the Hunza's represent a population that has been cancer free for over 900 years of its existence. This population has a natural diet, which supplies on the average between 50 to 75 milligrams of Vitamin B17 a day.

Hunzaland is a land that has sometimes been described as the "place where apricot is king." The Hunzakuts eat the fresh apricots for the three months they are in season and the remainder of the year they eat dried apricots. They never eat a dried apricot without enclosing the seed between them. This supplies them with better than average of 50 to 75 milligrams of Vitamin B17 a day.

There are many of us in the Western World who don't ingest this amount of Vitamin B17 in the course of an entire year. As a result we're in the midst of a fulminating deficiency of Vitamin B17 or nitriloside, the anti-neoplastic vitamin. Its absence from our diets accounts for the fact that cancer on our population has reached such a pandemicsity as to account for its occurrence in one in every three American families..."

**Remember to keep in mind that this report is to educate you on the potential resources that are available to anyone who is interested in beating Cancer.**

I found the following information in a magazine called **EnergyTimes the May 2002 issue**. You could find this magazine in your local health store; it's free. The article is called **Cancer Weaponry** and it gives you foods, what substances they contain, and the latest research. Since people are always asking me about what they should eat, here are some examples:

**Beans & Peas**-Contain fiber, folate, lignins (type of fiber), phytosterols (plant fats), and saponins (phytochemicals with a sweet taste). The latest research-The fiber in beans has long been linked with lower cancer rates; now research shows that folate, a B vitamin, may reduce your colorectal cancer risk. Phytosterols, healthy plant fats, can slow the growth of prostate cancer.

**Berries** (Strawberries, Raspberries, et al)-Contain anthocyanadins (dark pigments), vitamin C. The latest research-Anthocyanadins and vitamin C are antioxidants that may help protect DNA against damage that leads to cancer. In lab studies, berries' anthocyanadins interfere with the metabolism of cancer cells. Research on black raspberries show they may lower your risk of esophageal cancer.

**Cruciferous Vegetables** (Broccoli, Cauliflower, et al) - Contain dithiolthiones, fiber, indoles, isothiocyanates, selenium, sulfurophane (chemical responsible for broccoli's sharp taste), and vitamin C. Latest research-Sulfurophane activates; over enzymes responsible for neutralizing toxins and indoles appear to inhibit the development of breast cancer cells. Selenium may fight prostate and stomach cancer, and deter colon cancer.

**Carrots, Apricots, Sweet Potatoes, Cantaloupe** - Contain Beta-carotenoids (red, orange and yellow pigments). Latest research-Carotenoid-rich foods stimulate immunity; daily consumption seems to protect against prostate and stomach cancer. Smokers who eat these fruits and vegetables may reduce their lung cancer chances. In one large study, women who ate the most carotenoids had a relatively low breast cancer risk.

**Citrus Fruits** (Oranges, lemons, Grapefruit)-Contain bioflavonoids (pigments), folate, hesperatin, limonene, narangenin, vitamin C. Latest research-Eating citrus fruits is linked to a lower rate of esophageal and stomach cancers. Men who consume the most vitamin C run the lowest risk of death from causes, including cancer. Bioflavonoids inhibit cancer-promoting hormones and enhance activity of cancer-fighting immune chemicals.

**Fish**-Contain omega -3 fatty acids: docosahexaenoic acid, eicosapentaenoic acid (EPA). Latest research-Omega-3 fats inhibit COX-2, an inflammation-stimulating chemical that may promote cancer by increasing production of free radicals, and molecules that damage DNA. Most studies show that eating fish lowers your risk of cancer.

**Garlic** - Allicin (sulfur-bearing compound) - Contains antioxidants, germanium, isoflavones, selenium. Latest research-More than a dozen studies show that garlic provides strong protection against stomach and colon cancer. Garlic can block creation of cancer-causing compounds in the digestive system; it also keeps cancer cells from proliferating.

**Mushrooms:** (Maitake, Lion's Head, Shiitake, et al)-Contains antioxidants, lignins, polysaccharides (long chain sugar molecules), and selenium. Latest research - Polysaccharides stimulate immunity-Lentinan, from shiitake, fights inflammation and is used in Asia to enhance cancer treatment and reduce side effects. Studies show that substances in Maitake can be useful against cancer.

**Olive Oil** - Contains antioxidants, lignans, phenols, secoiridoids, and squalene. Latest research-In a worldwide study, people who ate the most olive oil had the lowest rates of colon cancer. Squalene interferes with an enzyme that can activate cancer genes.

**Soy** - Contain daidzein, genistein, lecithin, phytosterols, and saponins. Latest research-The low rates of breast cancer in Asia have been linked to eating soy foods. Soy compounds fight cancer by inhibiting cancer-promoting enzymes and slowing the blood supply to tumors. They may also block the action of cancer-promoting hormones.

**Spices** (Rosemary & Turmeric)-Contain carnosol, diterpenes, rosmarinic acid (rosemary), and curcumin (turmeric). Latest research- Carnosol and curcumin both interfere with the COX-2 enzymes, chemicals that lead to inflammation. Rosemary also encourages production of detoxifying enzymes and keeps cancer-causing agents from attaching to DNA, while curcumin inhibits tumor development.

**Tea** (Black & Green)-Contains antioxidants, Epigallocatechin Gallate (EGCG), theaflavin, thearbigins. Latest research-Tea's antioxidants may reduce carcinogenic DNA damage. EGCG inhibits growth of cancer cells, and green tea has slowed breast cancer growth in lab studies. Tea drinkers have been shown to experience lower rates of lung cancer and melanoma.

**Tomatoes** - Contain Antioxidants, coumarins, flavonoids, lycopene (red pigment) and other carotenoids, vitamin C. Lycopene is best known for reducing the risk of prostate cancer. But research also links lycopene to lower rates of lung cancer; lycopene and vitamin C together may reduce breast cancer risk.

**Whole Grains** (Brown Rice, Whole Wheat, et al) - Contain B vitamins, fiber, saponins and natural vitamin E. Latest research-Whether or not dietary fiber lowers colorectal cancer risk is still controversial, but experts still recommend consuming larger amounts of fiber from cereals and whole grains. Natural vitamin E has been linked to lower prostate cancer rates.

If you have access or know someone with access to the Internet, explore and learn as much as you can. Put your life back in **your hands** and give **your body** the proper material to rebuild healthy cells with. **Your body** has the capability. So,

**DO IT NOW.**



## Remember

**Your Life Is In Your Hands**

**Learn As Much As You Can**

and as the saying goes,

**“Knowledge Is Power”,**

but

**Knowledge Can Also Be Powerless,**

**Unless You Put That Knowledge Into Action.**

As long as you and your doctor agree, a complementary/integrative medicine program can be coordinated to help with any treatment program that you are currently on.

If you or your doctor have any questions or would like to learn more about any of the topics mentioned in this report you can call **(516) 409-6978**, send me an e-mail at [healthcoach9@gmail.com](mailto:healthcoach9@gmail.com), or go to my web site <http://www.abcsofhealth.com/>. For those of you who may be interested, I do provide one on one and group nutrition/wellness programs and seminars and lymphatic exercise classes.

If you need help in deciding which products would be best for you, you can contact me and I will be glad to help you decide.

### **Important Note to Remember:**

**With Any New Diet Change Or Lifestyle Program You Decide To Follow, You Must Start Slowly. The Sicker You Are The Slower You Should Start, Because The Faster You Put Into Your Body Good Material, The Faster Your Body Gets Rid Of The Bad And If You Do This Too Quickly, You Actually May Feel Worse Than You Currently Do. Some Call This A Healing Crisis. If You Are Currently On Any Medication And/Or Chemotherapy, It Is Even More Important That You Start Slowly, Because The More Efficient Your Body Becomes The More Toxic Your Medication May Become. That Is Why You Should Always Be Under A Doctor's Care. As You Progress, You And Your Doctor May Feel That Your Medication Could Be Gradually Reduced And/Or Eventually Eliminated.**

Once again, if you or your doctor need some clarification as how to coordinate a complementary health program with your current program or how a complementary health program may benefit you individually, I can be contacted by calling **516-409-6978** or by sending an e-mail to [healthcoach9@gmail.com](mailto:healthcoach9@gmail.com)

I wish you all the best, and may **God Bless You, God Bless America and May God Bless Us All.**

Note: The information on lymphology was made possible with the help of Laura L. Hensley, RN, BSN, CL The medical clinical study references came from a combination of a Medline search at [www.PubMed.gov](http://www.PubMed.gov) and Robert Cohen and his <http://www.notmilk.com> / web site.