

BREASTS, BROCCOLI, AND CANCER

By Thomas Lodi, M.D.



Breast cancer is the most prevalent cancer in the World today. More than 1.1 million women each year are diagnosed with breast cancer and over 200,000 of these women are Americans. These statistics are frightening especially in light of the fact that we are increasingly being told that genetics play such a major role in the development of cancer. The result is that most women feel helpless – as if getting cancer is as likely to happen as getting the flu.

Fortunately, we are coming to understand that influences other than genetics are far more important in the development of cancer and can even override genetic “tendencies.” In January of 2008, the National Institute of Health announced that it would invest over \$190 million during the subsequent five years into researching epigenetics. Epigenetic processes determine how a gene will be expressed and therefore control growth and development.

What Does This Have To Do With Broccoli?

Epigenetic refers to the fact that it is the environment of the cell that determines which genes will be turned on and which genes will be turned off. Clearly, if all of the 30,000 to 35,000 genes in our cells were turned on simultaneously, we would not only be totally dysfunctional and unable to sustain life, but we would not even look human. So, it is not the genetic code that influences health and disease but rather the delicate coordination of these genes turning on and off. It is this symphonic interplay of gene expression, which results in the unique complexity of every individual. Even identical twins change differently over time when exposed to different environments.

What determines the environment of a cell? Diet and environmental conditions!

Researchers have also come to understand that epigenetic changes can be passed on from generation to generation. So, what you eat and how you live can actually influence how your grandchildren will fare when they are born. This “inheritance” is far more important than any amount of money or property that one could or would leave.

Let Health Be Your Legacy

There are over 300 case-controlled studies that clearly demonstrate that eating vegetables (more specifically

vegetables that are in the genus of plants known as Brassica, and more specifically, broccoli) protects against the development of cancer. Other vegetables in this category include cabbage, watercress, kale, brussels sprouts, cauliflower, kohlrabi, and many others including Peruvian maca and mustards.

As the number of servings per month go up, the odds ratio of developing cancer drops significantly. For example, the odds ratio for breast cancer when five or more servings per week are eaten is 0.58, which is almost a 50% reduction in risk!

Although researchers at the University of California at Berkeley discovered that DIM in Brassica vegetables is a powerful modulator of the immune system resulting in potent anti-viral, anti-bacterial, and anti-cancer activity, it is Dr. Jed Fahey who has been at the forefront in this explosive area of research.

Dr. Fahey is a Faculty Research Associate in the Department of Pharmacology, Laboratory of Molecular Pharmacology at the Johns Hopkins University School of Medicine and a plant physiologist who manages Johns Hopkins University’s Brassica Chemoprotection Laboratory. Much of the fruit of his work has been in developing cruciferous (Brassica) plants as chemoprotective agents.

This information is becoming critically important and supremely relevant today, since the World Health Organization (WHO) announced last year that by 2010, cancer would become the leading cause of death worldwide. The Multinational Brassica Genome Project (MBGP) and much of the research in this area can be found at <http://www.brassica.info/>.

Brassica Vegetables Kill Cancer

Researchers in Italy published in the June 2005 issue of the *Journal of Nutrition* that when they mixed cauliflower juice with breast cancer cells, not only did the cancerous cells stop growing, but at higher doses they were actually killed (they exploded), and not by the usual mechanism known as apoptosis. Furthermore, normal cells were not affected because, for some unknown reason, cauliflower has a preference for breast cancer cells over other mammalian

cell lines. Even more remarkable is that this same effect was seen in both estrogen-receptor ER (+) and ER (-) cells. There is an obvious implication here that not only are these vegetables protective regarding the development of breast cancer, but they may even be useful in treating cancer once it has arisen.

It is not estrogen that is the problem in breast and other cancers, it is what the liver does with the estrogen – the metabolites. The cytochrome 1B1 enzymes in the liver are stimulated by cigarette smoke, charbroiling of flesh foods, the burning of different fuels (e.g., gasoline and coal), as well as many other environmental toxins. These enzymes, in turn, convert estrogen into 4-OH-estrone (E1), a potent genotoxic (cancer producing) substance. On the other hand, 2-OH-E1 is a “good” estrogen metabolite that is produced by the cytochrome 1A1 enzymes of the liver stimulated by broccoli and its Brassica cousins. One can easily measure the ratio of the 2-OH E1 to the 16-alpha-OH E1 in the urine over time (24 hours). If the ratio is low, the risk for breast cancer is increased; and, if high, the risk is reduced. In fact, one pound of broccoli per day (approximately 500 grams) shifts the ratio significantly. For every 10 grams of broccoli consumed per day, there is an increase in the ratio of 0.8. Therefore, the recommended amount to be consumed for different individuals can be calculated readily, once these results have been obtained. The conclusion drawn by a respected cancer journal is that broccoli is an effective and acceptable strategy to prevent breast cancer.

Brassica Vegetables Are Detoxifiers

In addition to the metabolism of estrogens, the Brassica plants stimulate certain enzymes in the liver to enhance detoxification, which is of considerable importance since we swim in a sea of carcinogenic toxins.

The liver utilizes two mechanisms to remove toxins, referred to as Phase I and Phase II detoxification. In Phase I, liver enzymes modify toxic substances in order to make them recognizable to Phase II enzymes. In Phase II, a different set of enzymes convert these modified toxins into more water-soluble forms, which can then be eliminated through the urine or the feces.

The compounds in Brassica plants that make them bitter and give them a strong and sometimes disagreeable odor are actually the active, anti-cancer components. They function as the defense system of the plant, sort of like its “immune system.” They are known as phytoalexins. These substances are actually modified and used by the agriculture industry to develop pesticides and fumigants.

Chemically, these compounds are known as glucosinolates, which are modified to become isothiocyanates (ITC), the active, anti-cancer compound. An enzyme known as myrosinase is released when these plants are injured, which then converts the glucosinolates into ITC, hence chewing is required to activate these anti-cancer compounds. The normal gut flora (healthy bacteria) also produces myrosinase, however, most Americans have taken too many antibiotics and other toxic chemicals, both voluntarily and involuntarily resulting in very unhealthy and unbalanced gut flora. So, it is advisable that we all chew thoroughly, just in case.

These ITC compounds, after conversion from glucosinolates, greatly induce Phase II enzymes in the liver, which results in excretion of the carcinogens circulating throughout the body. Although these compounds from Brassica vegetables may modify the Phase I enzymes, they have a much greater effect on Phase II, which is why they are so important. Environmental toxins, such as dioxin (extremely poisonous), have their effect by inducing only Phase I enzymes, which activate many carcinogens. Without the concomitant activation of Phase II enzymes, the results are often fatal.

These Brassica-derived chemicals also stop the growth of cancer cells after the initiation phase (cancer cells begin), interfere with promoters that make cancer cells grow (such as estrogen), interfere with angiogenesis (blood vessel growth in tumors), activate apoptosis (cell death) and block rapid growth of cells. This data is found throughout the scientific literature in both in-vitro and animal studies.

There are many excellent supplements containing flavonoids, quercetin, sulforaphanes, and the other compounds derived from Brassica plants; but if one wishes to obtain these benefits in the most potent, efficacious, and natural way, just eat them.

A word of caution, though, is in order. About 97% of these nutrients are lost with microwaving and 66% with boiling. Steaming is an acceptable way of preparing these vegetables for consumption; but raw, fresh, and organic will give you what nature intended – a long and joyful life. 

Dr. Thomas Lodi, MD has been practicing medicine for 22 years. Before attending medical school, Dr. Lodi practiced as a clinical psychologist and was director of psychological services for a 240-bed, in-patient facility in Hawaii. After graduating from the University of Hawaii, School of Medicine in 1985, Dr. Lodi served as a visiting Clinical Fellow at Columbia University College of Physicians and Surgeons in New York City where he also underwent training in Internal Medicine. From 1991 to 1996, he was Clinical Instructor of Medicine at the University of Hawaii, School of Medicine.

For the first ten years of his medical career, Dr. Lodi worked in conventional settings as an internal-medicine specialist, urgent-care physician, and as an intensivist in ICU and CCU departments of various hospitals. Subsequently, he continued his search for more-effective and less-toxic therapies by training around the World from Japan to Europe to Mexico, as well as throughout the U.S. Although he occasionally sees patients for other medical conditions, Dr. Lodi now practices Integrative Oncology (caring for people with cancer). He may be reached at 1-480-834-5414.

Good intentions will always be pleaded for every assumption of authority. It is hardly too strong to say that the Constitution was made to guard the people against the dangers of good intentions. There are men in all ages who mean to govern well, but they mean to govern. They promise to be good masters, but they mean to be masters.

— Daniel Webster

ALTERNATIVE VIEW FOUR – AV4 March 26-28, 2010, London, England

It was held the last weekend of March 2010, the fourth such event, in London, near Heathrow Airport. Ian Crane's Alternative View Four – or AV4 as it's commonly known as – was a hit, with Master of Ceremony Andy Thomas and such knowledgeable speakers as Daniel Estulin ("The Bilderbergers"), William Engdahl ("Seeds of Destruction"), and return-hit David Bellamy (on the global-warming hoax). Professionally done and well-attended, AV4 kept the attendees enthralled and asking for more.

NHF President Scott Tips was also one of the speakers, talking again about Codex Alimentarius and its corporate-controlled "health" agenda. There was so much material to present this time that, unlike at AV2 last year, Scott did not get to take questions from the audience. But the material was very well-received and led to numerous additional contacts for NHF in the U.K. A DVD copy of Scott's and the other speakers' presentations can be easily purchased from Alternative View at www.alternativeview.co.uk and are well worth looking into.

Ian Crane – one of the Federation's biggest supporters in the U.K. and a recipient of its Health Freedom Hero Award – has long specialized in speaking about Deep Geopolitics and his Alternative View events bring together speakers on a wide range of topics that cannot often be heard so easily elsewhere. His next such event will take place the weekend of 11-11-11, perhaps a significant date. For those who cannot wait until November 2011, the Glastonbury Symposium – a similar event full of speakers about global cover-ups and climate issues – will be held, quite naturally, in Glastonbury, England from July 23-25, 2010 (www.glastonburysymposium.co.uk).



**Scott Tips -
NHF President**

ON DVD

**Codex Alimentarius:
Making Sickness
Compulsory**

www.alternativeview.co.uk