

Chronic Inflammation and Ill Health

Put out the fire within using plant-based supplements



Dr. Vijaya Nair

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Introduction

I was born in Singapore, an island nation in Southeast Asia, and my academic studies were similar to that of any Western doctor. I was initially trained as a psychiatrist (a medical doctor who specializes in mental health) in my home country. I later moved to the United States and completed my post-doctoral fellowship at Harvard Medical School and at Columbia University. I then taught epidemiology (the study of identifying risk factors for disease) at Columbia. While at Columbia I came upon some promising research on a botanical therapy called cultured soy, showing it held great promise for people with terminal cancers and chronic infections. I read through all of the studies with great interest. Then I interviewed some of the scientists who conducted the research to find out more about their methodologies and results. Subsequently I had a whole team at Columbia — general practitioners, oncologists (doctors who specialize in cancer), and biostatisticians (people who apply statistics to biology) — review the data. We were convinced the therapy had potential.

For six years I collaborated with various research centers across the globe and worked one on one with cancer patients to study the effects of cultured soy. The results were nothing short of amazing. In fact, the case reports I compiled won recognition from the Office of Cancer Complementary and Alternative Medicine (OCCAM) at the National Cancer Institute. While I was busy studying cultured soy, another researcher, Dr. Bharat B. Aggarwal, was doing groundbreaking work with curcumin, a constituent of the herb turmeric. Dr. Aggarwal was arriving at similar conclusions about curcumin's ability to fight chronic disease that the Columbia team had realized about cultured soy. What I learned through reviewing all the research being published was that successful botanical therapies for preventing and treating chronic diseases have one thing in common: They all fight inflammation. Inflammation is your immune system's way of protecting you from physical trauma or foreign invaders, such as viruses and bacteria. It's supposed to be a short and powerful response. But sometimes the body doesn't turn off the inflammation switch and it ends up destroying the very tissues and organs it was meant to protect. We tend to think of inflammation as synonymous with arthritis. However, inflammation can strike any-

where in your body. It's a major contributor to heart disease, cancer, Alzheimer's, and many more life-threatening conditions. Control inflammation and you control disease.

Pouring over those scientific studies, I had an "aha!" moment. I realized this information was too valuable to sit in complicated medical journals, unread by the lay reader. It was at that moment that I decided to devote my life to educating people about nature's most powerful anti-inflammatory remedies. Consequently, my team and I developed and started marketing the science based patented proprietary formulations contained in the JIVA dietary supplements. These unique nutritional formulations were developed by a stellar team of scientists, nutritionists, research chemists and renowned Aryurvedic and Chinese traditional medical practitioners. They have helped thousands of people over the past few years. We are deeply honored and privileged to present them to you

Chapter One

What is chronic inflammation?

Inflammation is your immune system's way of protecting you from physical trauma or foreign invaders, such as viruses and bacteria. It's supposed to be a short and powerful response. But sometimes the body doesn't turn off the inflammation switch and it ends up destroying the very tissues and organs it was meant to protect. We tend to think of inflammation as synonymous with arthritis. However, inflammation can strike anywhere in your body. It's a major contributor to heart disease, Alzheimer's cancer, and many more life-threatening conditions. Control inflammation and you control disease.

One of the major suspects behind chronic, low-grade inflammation is chronic, low-grade infection. When you get sick, your immune system goes into inflammation overdrive to protect you from the invading germs. Once the threat is conquered, inflammation goes back down to normal levels. But, if the virus or bacteria or fungus doesn't completely go away, the body settles for continual low-grade inflammation to fight the "invader".

Other suspected causes of chronic, low-grade inflammation include smoking, air pollution, elevated levels of LDL (bad) cholesterol, high blood pressure, diets high in sugars and bad fats (both saturated and trans fats), and lack of exercise. Even emotional stress can set off the inflammatory response.

Chapter Two

Arthritis and chronic inflammation.

Arthritis, a disease of the joints, is primarily a pro-inflammatory disease. Although there are more than 100 different kinds of arthritis, with the most common being gout and rheumatoid arthritis. Joint cartilage wears away with inflammation. And if you can prevent inflammation you can prevent arthritis. Even if you already have arthritis reducing the amount of inflammation in your system will help relieve your symptoms and give you more freedom of movement — sometimes within weeks or days.

Highly movable joints such as the wrists, fingers, shoulders, hips, and knees, are the most likely to be affected by osteoarthritis. These are called “synovial joints” because the two bones meeting in this type of joint are bathed in synovia, a clear fluid whose job is to provide lubrication. Sometimes, though, the membrane that secretes the synovia becomes inflamed. Then, an avalanche of inflammatory chemicals gets released — and those inflammatory chemicals wear away the joint cartilage. The first step in any program to combat arthritis then isn’t to stop the pain. It’s to stop the inflammation!

Gout occurs in response to the presence of monosodium urate crystals in joints, bones and soft tissues, and is usually treated by non-steroidal anti-inflammatory drugs (NSAIDs), oral or intravenous colchicines, and oral, intravenous or intrarticular glucocorticoids. All can abort acute attacks, but they also may have severe side effects. With rheumatoid arthritis 75 percent of the sufferers are women, suggesting the importance of hormones in the etiology of the disease. Smoking and stress are also thought to contribute to this disease, which is characterized by joint stiffness and swelling, often in a symmetrical pattern on both sides of the body.¹ The treatment for this type of arthritis is to administer anti-inflammatories among other drugs to control pain and swelling, delay disease progression, minimize disability, and improve quality of life.

¹ Current Opinion in Pharmacology 2007, 7:344–351 www.sciencedirect.com

As an alternative to the NSAIDS and their potential side effects, the use of natural anti-inflammatories should be considered. Curcumin and Holy Basil are both good alternatives that have had successful studies to support their use. A study found curcumin substantially suppresses systemic inflammation markers MMP-3 by 48% to 99%, and MMP-13 by 45% to 97%.² Research shows curcumin acts as a scavenger of nitric oxide and inhibits COX-2, a pro-inflammatory substance. Clinically, curcumin has worked as well as cortisone or phenylbutazone for rheumatoid arthritis, osteoarthritis and post-operative inflammation.³ A double-blind crossover study in patients with "definite" rheumatoid arthritis compared the antirheumatic activity of curcumin (1200 mg/day) with phenylbutazone, a corticosteroids drug (300 mg/day). The curcumin therapy resulted in "significant" improvements over corticosteroids. Curcumin better relieved morning stiffness and joint swelling, and improved walking time. Curcumin was well-tolerated and produced no side-effects.⁴

Curcumin seems to work in humans studies too. In a study consisting of eighteen patients with rheumatoid arthritis, after just two weeks curcumin caused significant improvements in morning stiffness, joint swelling, and walking ability.⁵ Human cell studies have additionally shown that curcumin suppresses the inflammatory chemicals that contribute to the development of osteoarthritis, and decreases some of the abnormal changes in joint tissue that characterizes rheumatoid arthritis.

² Liacini, S., et al., "Inhibition of interleukin-1-stimulated MAP kinases, activating protein-1 (AP-1) and nuclear factor kappa B (NF-kappaB) transcription factors down-regulates matrix metalloproteinase gene expression in articular chondrocytes," *Matrix Biol.*: 21(3), 251-262, 2002.

³ Goel A., et al. "Specific inhibition of cyclooxygenase-2 (COX-2) expression by dietary curcumin in HT-29 human colon cancer cells," *Cancer Lett.*: 172(2), 111-1118, 2001.

⁴ Deodhar, S.D. et al., "Preliminary study on antirheumatic activity of curcumin," *Indian J. Med. Res.*: 71, 632-634, 1980.

⁵ McCaleb, R., Leigh, E. and K. Morien. *The Encyclopedia of Popular Herbs. Your Complete Guide to the Leading Medicinal Plants*. Roseville, CA: Prima Health, 2000, pp. 378.

Chapter Three

Cancer and chronic inflammation

The first stage in cancer development is when a normal cell mutates into a precancerous cell. Any number of things can cause a cell to mutate, including chronic inflammation, toxic chemicals, viruses, UV radiation, or aging.

All types of inflammation can cause cancer. But just because you have a mutated cell doesn't mean you'll get cancer. Lung cancer can be caused by chronic smoke-induced inflammation. Esophageal cancer can be caused by acid reflux-induced inflammation. Stomach cancer can be caused by *H. pylori* (the bacterium that causes ulcers)-induced inflammation. Bladder cancer can be caused by urinary tract infection-induced inflammation. Liver cancer can be caused by hepatitis B or C-induced inflammation. Lymphoma can be caused by Epstein Barr (the virus that causes mononucleosis) -induced inflammation. Cervical cancer can be caused by *Human papillomavirus* (the virus that causes genital warts)-induced inflammation. Kidney cancer can be caused by kidney stone-induced inflammation. And colon cancer can be caused by irritable bowel syndrome-induced inflammation.

Whether the inflammation is caused by an infection (such as hepatitis), a mechanical irritant (such as kidney stones), or a chemical irritant (such as stomach acid), the result is the same. Chronic, low-grade inflammation greatly increases your risk of developing cancer.

Cancer cells must be fed to survive. Cancer cells feed on sugar (and sugar substitutes), salt, mucus (produced by milk), acid (produced by eating meat), and caffeine. The first step should be to rid your diet of these items and hence begin starving the cancer cells. A diet of 80 percent fresh fruits, whole grains, seeds, nuts and a little fruits will create the optimal alkaline environment for the body's healthy cells.

Cancer is normally controlled by the T cells in our body that convert nitrogen into nitric acid, which dissolves cancer cells. Cancer cells seek out nitrogen in our body's protein, trying to starve the T cells. The nitrogen comes from protein stored in the muscle tissue and cancer eats away at this muscle to get at the nitrogen to deprive the T cells of food. Cancer cells get food from

an in-growth of blood capillaries and grow a tough protein coating that is 13 times thicker than a regular cell. Cancer cells talk to healthy cells and send an erroneous DNA message (not to die) throughout our body. This is why even though we remove the cancerous body part, cancer reoccurs somewhere else years later. The message has been sent and festers in these healthy cells until they too, become cancerous.

In numerous studies over the last decade it has shown that if we foil cancer's ability to sustain this irrational behavior, the cancer will become weakened enough for our T-cells to get the upper hand. Fermented soy (*see chapter on fermented vs. unfermented soy*) foils the cancer's plan and supports the protein in the muscle which helps to reduce the protein wasting effect of chemotherapy. Once the cancer cell ingests the properties of the fermented soy, the beneficial soy isoflavones, protease inhibitors, and phytosterols undo the cancer reprogramming it to die again, and imparting that DNA into daughter cells. The soy isoflavones Genistein and Diadzein cause the cancer cell to differentiate and change back to normal cells. It also inhibits the cancer cells ability to get food from the blood thus starving and weakening existing cancer cells. Single soybean extractions like soy isoflavonoids alone cannot do this as they are too large to get absorbed.

A case study report done by the *Division of Medical Oncology, Massachusetts General Hospital*, confirmed that "fermented soy products supports the prospective evaluation of alternative therapies such as these in patients with platinum-refractory ovarian can." The *Biochemistry Division, National Cancer Center Research Institute, Tokyo, Japan* suggested that "the isoflavone, genistein, may have some role as a chemopreventive agent against cancer in humans. During testing, the level of genistein in the fermented soybean products was higher than in soy beans and soybean products such as soy milk and tofu. From these observations, it is suggested that the beta-glycosyl bond of genistin is cleaved to produce genistein by microbes during fermentation to yield miso and natto. Soy sauce was also found to contain both isoflavones, but at levels lower than in miso and natto. On the basis of the data for average annual consumption of soybeans and related products, daily intake of genistein and genistin by the Japanese is calculated to be 1.5-4.1 and 6.3-8.3 mg/person, re-

spectively. These levels are much higher than those for Americans or Western Europeans whose mortality rates for breast, colon and prostate cancers are greater than the Japanese.”⁶

Cancer also loves to live in an inflammatory environment and one that is lacking cellular oxygen. By following protocols to curb chronic inflammation through natural anti-inflammatories such as curcumin, you can eliminate the happy home that cancer lives in making it more difficult to thrive. “In several systems, curcumin has been described as a potent antioxidant and anti-inflammatory agent. Evidence has also been presented to suggest that curcumin can suppress tumor initiation, promotion and metastasis. Pharmacologically, curcumin has been found to be safe. Human clinical trials indicated no dose-limiting toxicity when administered at doses up to 10 g/day. All of these studies suggest that curcumin has enormous potential in the prevention and therapy of cancer. The current review describes in detail the data supporting these studies, and discusses the mechanism of action of curcumin”.⁷

In a study⁸ *Dietary supplementation of curcumin enhances antioxidant and phase II metabolizing enzymes in ddY male mice: possible role in protection against chemical carcinogenesis and toxicity*, where a dietary supplementation of curcumin was given to mice, the authors suggested “that the significance of these results can be implicated in relation to cancer chemopreventive effects of curcumin against the induction of tumours in various target organs.”⁹

Another study (*Clinical Cancer Research*) in conjunction with the chemotherapy drug Taxol, showed that when the mice were given curcumin with the Taxol (which can create inflammation), it reduced inflammation and allowed the chemo to work better against the cancer without negative implications. And, those mice with just the curcumin alone fared as well as the ones with the curcumin and Taxol.

⁶ Fukutake M, Takahashi M, Ishida K, Kawamura H, Sugimura T, Wakabayashi K

⁷ Aggarwal BB, Kumar A, Bharti AC , Anticancer potential of curcumin: preclinical and clinical studies. *Anticancer Res.* 2003 Jan-Feb;23(1A):363-98.

⁸ Note: This study refers to a specific Curcumin C3 Complex which is used the Jiva products.

⁹ Iqbal M, Sharma SD , Okazaki Y, Fujisawa M, Okada S, *Pharmacol Toxicol.* 2003 Jan; 92(1):33-8.

Increasing cellular oxygen is a key to destroying the home where cancer lives. This process is difficult if your cells are coated with “sludge” from poor diet and ingesting hydrogenated oils. The prime cause of cancer is the replacement of the respiration of oxygen in normal body cells by a fermentation of sugar. Restricting sugars (maybe try a macrobiotic diet) may cut off cancers food supplies, but more important it is essential to restore the cellular oxygen in the cells. Exercise can help but oxygen still may have a difficult time transferring through the cell membrane. The body requires special fats that make it possible for sufficient oxygen to reach the cells through the membrane. These are the essential fatty acids (EFAs) which must be gotten through food or supplements because the body can't manufacture them.

Chapter Four

Heart problems and inflammation

People with high levels of LDL cholesterol are more likely to develop cardiovascular disease. We also know that smokers, people with high blood pressure, and those who don't exercise all are candidates for heart problems. What all those contributors of heart disease have in common is that inflammation triggers them. Chronic, low-grade inflammation contributes to cardiovascular disease by the accumulation of plaque on the artery walls and it also causes those plaques to burst, tearing them away from the artery wall so they float into the bloodstream giving risk of a heart attack.

While LDL cholesterol is still an important risk factor for cardiovascular disease, researchers are becoming increasingly convinced that C-reactive protein (CRP) (an indicator of chronic body-wide inflammation) is even more telling. CRP readings that are just slightly elevated, at 3.0 mg/L or more (normal is 1-3), triples your risk of cardiovascular disease. On the other end of the spectrum, people with CRP levels below 1.0 mg/L have a low risk of developing cardiovascular disease.¹⁰ Therefore, by controlling your inflammation you will keep your levels down and take yourself out of the high risk category.

In addition to Statins or niacin which is normally prescribed to lower CRP, we have found that curcumin is a major player in reducing inflammation. Studies with rats revealed that curcumin appeared to alter the genetic signaling involved in plaque buildup at the molecular level.

UC Berkeley researchers found that people with elevated CRP were able to bump down the number an average of 25 percent by consuming a daily dose of 1,000 milligrams of C. Another product, Sytrinol[®] can help plaque management. Derived from natural citrus and palm fruit extracts, this formula combines polymethoxylated flavones (PMFs), delta, gamma, and alpha tocotrienols and other proprietary ingredient components. Multiple clinical trials have demonstrated that Sytrinol[®] acts synergistically to significantly improve total cholesterol, LDL cholesterol,

¹⁰ American Heart Association. "Inflammation, heart disease and stroke: The role of C-reactive protein." *American Heart Association*.

and triglycerides up to 30%, 27%, and 34%, respectively, compared to placebo. Additionally, Sytrinol[®] is a powerful antioxidant with heart health benefits including the reduction of arterial plaque, improved glycemic control and reduced blood platelet aggregation.

Chapter Five

Brain health and inflammation

Over 4 million people are affected by Alzheimer's, a number estimated to increase to 7.7 million by 2030! Alzheimer's disease is characterized by the development of two abnormal structures in the brain — plaques and tangles — that damage and kill nerve cells. Inflammatory chemicals produced by your own body are what trigger this assault. As mentioned in the chapter on heart problems, the CRP levels point to the link between inflammation and Alzheimer's. Researchers measured the CRP levels of men from 1968-1970 and followed up with them twenty-five years later to see who developed dementia (including Alzheimer's). Compared with men who had the lowest CRP levels, men with higher levels were three times more likely to have dementia.¹¹

Not only does inflammation play a role in the development of Alzheimer's. It also makes it progress faster. That's because the plaques and tangles themselves are mechanical irritants to the brain. And the inflammation they create causes the release of brain-killing chemicals. And what do doctors recommend to lower the CRP levels? Statins (which are the drug version of niacin). These prescription medications are excellent at lowering cholesterol, but they also lower levels of coenzyme Q₁₀, a nutrient that's necessary for cellular health. Therefore, you always want to take statin drugs in combination with CoQ₁₀ supplements.

As we have mentioned before, curcumin is a highly researched spice that has been recommended to reduce inflammation by inhibiting the build-up of the harmful protein deposits called amyloid plaques that occur in the brains of Alzheimer's patients. Super nutrients such as curcumin can also help keep free radicals at bay by absorbing the impact of these damaging particles. The results of information published in the journal *Neurotoxicity* show that curcumin deactivates one of the most damaging free radicals known as peroxynitrite by boosting antioxidant defenses in the brain and lowering inflammatory responses.¹² A study in the *Journal of Alzheimer's Disease* that when Vitamin

¹¹ Schmidt R, et al. Early inflammation and dementia: a 25-year follow-up of the Honolulu-Asia Aging Study. *Ann Neurol*. 2002 Aug;52(2):168-74.

¹² http://www.naturalnews.com/030709_carnitine_brain_health.html#ixzz26wC5CuvL

D3 was used in conjunction with curcumin, it boosted the immune system to protect the brain against the beta-amyloid deposits.¹³ The curcuminoids were found to enhance binding of beta-amyloid to macrophages and the vitamin D strongly stimulated the uptake and absorption of the beta-amyloid in the macrophages.

Curcumin has a multi-modal impact on various dementia models. One avenue of research is the role that it plays in combating oxidative damage caused by heavy metals in the brain, such as aluminum and iron.¹⁴ Countering the deleterious effects of heavy metal toxicity has been shown to improve memory retention and slow the aging process of the brain in several animal trials. Yet another way in which curcumin may support brain health is via improved blood flow. New research presented in the *American Journal of Pathology* implicates blood vessel constriction and the subsequent reduction in blood flow to the brain as a possible contributing factor to Alzheimer's progression. Curcumin extracts have not only been shown to improve the viscosity of blood, but they may also reduce plaque build up in arteries which impedes proper circulation.¹⁵

In addition to curcumin we can recommend ashwagahanda. Several test tube and animal studies have discovered that ashwagahanda actually regenerates brain cells! When added to human and animal brain cell cultures, ashwagahanda extract promotes the growth of critical structures in both normal and damaged brain cells. And one study in mice found that ashwagahanda phytonutrients helped preserve key brain cell structures, even in the face of a brain-toxic drug.¹⁶

Based on this information, researchers have declared one ashwagahanda phyto-nutrient "an important candidate for the

¹³ Jnl Alzheimer's Disease, V17, No3, p 703-117

¹⁴Hongmei Tanga, b, Daxiang Lua, b, Rui Panc, Xuebin Qind, Huangui Xionge, Jun Donga, b,, "Curcumin improves spatial memory impairment induced by human immunodeficiency virus type 1 glycoprotein 120 V3 loop peptide in rats", a Department of Pathophysiology, The Key Lab of State Administration of Traditional Chinese Medicine, Medical College of Jinan University, Guangdong, Guangzhou 510632, China

¹⁵ Tauheed Ishrat, Md nassrul Hoda, M. Badruzzaman Khan, Seema Yousuf, muzami ahmad, Mohd. Moshakid khan, Ajmal Amad, Fakhru Islam, amelioration of cognitive deficits and neurodegeneration by curcumin in rat model of sporadic dementia of Alzheimer's type (SDAT), European neuropsychopharmacology, V19 Issue 9 P 636-647 Sept 2009

¹⁶ Tohda C. Overcoming several neurodegenerative diseases by traditional medicines: the development of therapeutic medicines and unraveling pathophysiological mechanisms. *Yakugaku Zasshi*. 2008 Aug;128(8):1159-67.

therapeutic treatment of neurodegenerative diseases, as it is able to reconstruct neuronal networks”¹ and said that another phytonutrient from ashwaghandha “may ameliorate dysfunction in Alzheimer’s disease.”¹⁷ If these results translate to humans, then ashwaghandha, a simple and inexpensive herb of nature, could change the lives of millions of people in a way no drug has been able to do.

¹⁷ Kuboyama T, et al. Axon- or dendrite-predominant outgrowth induced by constituents from Ashwaganda. *Neuroreport*. 2002 Oct 7;13(14):1715-20

Chapter Six

Fermented (cultured) Soy vs. unfermented soy

Fermented foods have been the staple of many traditional cultures for centuries. Known to increase the beneficial bacteria in your body, fermented foods were invented long before the advent of refrigeration and other forms of food preservation. Fermented foods not only give you a wider variety of beneficial bacteria, they also give you far more than most dietary supplements. The anaerobic process (fermentation) does more than just preserve the food, however. It also makes the nutrients inside the food more bioavailable. Thus in the case of fermented soy, the Genistein and Diadzein are able to be released to work their 'magic' on inhibiting the cancer cells. To be effective, fermented soy products need to be comprised of cooked organic soy bean that is *fermented* (*L. acidophilus*, *L. bulgaricus*, *L. casei*, *L. plantarum* and *S. thermophilus*, probiotic bacteria.) Beneficial probiotic bacteria used in fermentation yield healthy cell wall contents and metabolites which promote optimal immune function and intestinal health. The fermented soy isoflavones will exhibit enhanced availability by the bacteria in the small intestine due to its conversion to more absorbable forms.

Raw soy beans contain many anti-nutrients that are anti-coagulants and have anti-enzyme agents. Their anti-coagulant activity is not reversed by vitamin K--the blood-clotting vitamin. Soy's anti-coagulant properties are attributed to its anti-trypsin activity. Trypsin is a special enzyme that is needed to digest protein. It allows vitamin B12 to be assimilated. Soybeans also have anti-proteolytic activity that increases the requirement for vitamin B12. At the same time, soy's anti-trypsin activity may actually create a vitamin B12 deficiency. Raw soybeans contain other anti-nutrients. Phytic acid, from phytates present in soybeans, binds up and prevents the absorption of minerals (especially zinc, calcium, and magnesium). Another group of anti-nutrients in raw soybeans are hemagglutinins. These substances have the ability to agglutinate (clump together) the red blood cells in humans and in other animal species, and suppress growth significantly. These anti-nutrients are known also as "phytoagglutinins" or "lectins." Although the level of many of these anti-nutrients present in raw

soybeans can be reduced somewhat by proper heat treatment or by sprouting of the beans, the substances will still be present, at lower levels.

The only satisfactory method known to deactivate these anti-nutrients is by means of traditional fermentation. This process involves a slow chemical change, triggered by bacteria, molds, and yeast. Fermentation deactivates the anti-nutrients present in raw soybeans, such as the enzyme inhibitors, trypsin inhibitor, phytic acid, hemagglutinins, and vitamin antagonists. Fermentation makes the nutrients in soybeans much more available and digestible. Therefore, fermented soy such as miso, tempeh, natto and JIVA fermented soy/curcumin Nutritional Beverage¹⁸ offer a much broader nutrient profile than non-fermented soy foods such as soy milk, soy nuts, tofu, and fresh or dry soybeans. Researched side effects of consuming concentrated amounts of fermented soy are very uncommon, and they are generally limited to mild stomach distress. With the exception of soy allergies in susceptible individuals, most individuals tolerate fermented soy products better than non-fermented soy products.

Research shows that fermented (cultured soy) can be used both as a cancer preventative and treatment. On the prevention side, a mountain of evidence shows that populations who eat soy regularly (primarily in the form of cultured soy) have lower rates of breast cancer, lung cancer, prostate cancer, and leukemia. A 2002 study of Asian-American women, for example, found that those who ate four servings of soy a week (including cultured soy foods such as miso and natto) during adolescence and adulthood slashed their risk of developing breast cancer in half.¹⁹ And a 2007 study of Japanese men showed that those with the highest intake of genistein and daidzien through consuming soy (again, including cultured soy foods such as miso and natto) were 58 percent less likely to develop prostate cancer than those with the lowest intake.²⁰ In addition to its anti-cancer benefits, fermented soy is beneficial in promoting heart health and healthy bones, and alleviating menopausal symptoms. Soybeans contain high

¹⁸ www.jivasupplements.org

¹⁹ Wu AH, et al. Adolescent and adult soy intake and risk of breast cancer in Asian-Americans. *Carcinogenesis*. Sep;23(9):1491-6.

²⁰ Nagata Y, et al. Dietary isoflavones may protect against prostate cancer in Japanese men. *J Nutr*. 2007 Aug;13(8):1974-9.

amounts of protein, including all essential amino acids (the only such vegetable source) and are also a rich source of calcium, iron, zinc, phosphorus, magnesium, B-vitamins, omega 3 fatty acids and fiber. But, to reap these benefits, soy must be digested and that means it must be fermented or sprouted.

If you eat the raw soybean or unfermented soy foods, there is an enzyme inhibitor present which works against your body's ability to digest the soy. This trypsin (enzyme) inhibitor is inactivated in the fermentation or sprouting process, and no longer prevents digestion. Therefore, it is absolutely essential to only eat fermented or sprouted forms of soy if you want to get any benefit out of this food.

One of the drawbacks of chemotherapy and radiation is that they increase the activity of the pro-inflammatory protein NF-KB, and make cancer cells less sensitive to cell-killing agents. When that happens, the patient may become "chemo-resistant" or "radiation-resistant," meaning he or she stops responding to the therapy.

Fermented soy turns down the pro-inflammatory protein that causes treatment resistance. But cultured soy doesn't just make chemo and radiation work better; it also has antitumor properties of its own. One of the case reports I submitted to OCCAM tracked a 67-year-old woman who was diagnosed with breast cancer in August of 1997. She had a tumor that was 15 x 15 x 20 mm in size. It was recommended that she have a total mastectomy or lumpectomy with removal of the auxiliary lymph nodes, followed by aggressive radiation and hormonal treatment. However, she refused all standard therapy. The doctors gave her six months to live. The woman began taking a cultured soy beverage in November of 1997 and received regular mammograms. Gradually the tumor decreased in size, until by January of 2001, it was just 7 x 5 x 6 mm. In February of 2004 — six years after she was supposed to have died — her mammogram and ultrasound readings did not show any evidence of malignant lesions.

Cultured soy and curcumin go together very well. Each one falls under the category of "medicinal foods," meaning they are both foods and medicines. The combination of these two botanical ingredients is more powerful than either ingredient alone. Research has shown that genistein, a key isoflavone in cultured soy,

works synergistically with curcumin, meaning they enhance each other's anti-inflammatory and antioxidant effects.²¹

As well, Bioperine a patented extract of black pepper when included in any fermented/soy supplement dramatically increases its absorption. If you've ever eaten in an Indian restaurant you know it's very common to see ginger, cardamom, and cinnamon appear together. That specific combination has been used for centuries in Indian cooking. These herbs are the perfect complement to cultured soy, which is extremely effective as a nutritional supplement for people with terminal cancers and chronic infections. All three herbs have a strengthening effect on digestive health and immunity, both of which can be weakened in cancer patients.

²¹ Shoba G, et al. Influence of piperine on the pharmacokinetics of curcumin in animals and human volunteers. *Planta Med.* 1998;64(4):353-356.

Chapter Seven

Curcumin

Curcumin, the main ingredient in the curry spice turmeric, is a naturally occurring antioxidant known as a polyphenol. Polyphenols are found in plants that have anti-inflammatory and other protective properties from diseases such as cancer to Alzheimer's and heart attacks. Curcumin has been used in traditional Indian and Chinese systems of medicine for centuries to treat a variety of ailments, including jaundice and hepatic disorders, rheumatism, anorexia, diabetic wounds, and menstrual difficulties. Curcumin at low doses can also enhance antibody responses. This suggests that curcumin's reported beneficial effects in arthritis, allergy, asthma, atherosclerosis, heart disease, Alzheimer's disease, diabetes, and cancer might be due in part to its ability to modulate the immune system. Together, these findings warrant further consideration of curcumin as a therapy for immune disorders.

New research with mice shows that curcumin may protect arteries from fatty buildup. Previous studies in rats showed that curcumin had the power to prevent heart failure. Turmeric-based compounds have also been touted as potential treatments for Alzheimer's, arthritis, and breast cancer. The current study suggests curcumin may thwart the development of atherosclerosis, or clogged arteries, a key risk factor for heart attacks and strokes. Researchers in France fed 20 mice a diet supplemented with curcumin or a comparison diet not supplemented with curcumin. After 16 weeks, mice fed on the curcumin-based diet had a 26% reduction in fatty deposits in their arteries compared to mice on the comparison diet.²²

In a study on 30 obese people it was revealed that curcumin supplementation reduced triglyceride levels between 10 and 13% without reduction in body mass index or body fat. Researchers indicated this was probably due to curcumin's insulin sensitizing effects. The curcumin used in this study was Curcumin C3 Complex used in the JIVA²³ brand of products.

²² Basic Cardiovascular Sciences Annual Conference, Las Vegas, July 20-23, 2009.
WebMD Health News: "Curry Spice May Counter Alzheimer's."

²³ www.jivasupplements.org

Curcumin is being studied for effectiveness in treating cancer. Curcumin has been shown to protect against skin, oral, intestinal, and colon carcinogenesis and also to suppress angiogenesis and metastasis in a variety animal tumor models. It also inhibits the proliferation of cancer cells by arresting them in the various phases of the cell cycle and by inducing apoptosis. Moreover, curcumin has a capability to inhibit carcinogen bioactivation via suppression of specific cytochrome P450 isozymes, as well as to induce the activity or expression of phase II carcinogen detoxifying enzymes. Curcumin, one of the most studied chemopreventive agents, is a natural compound extracted from *Curcuma longa* L. that allows suppression, retardation or inversion of carcinogenesis. Curcumin is also described as an anti-tumoral, anti-oxidant and anti-inflammatory agent capable of inducing apoptosis in numerous cellular systems.

Some of the studies include: Curcumin Downregulates Expression of Cell Proliferation, Antiapoptotic and Metastatic Gene Products Through Suppression of I κ B α Kinase and AKT Activation.²⁴ Curcumin inhibits proliferation, invasion, angiogenesis and metastasis of different cancers through interaction with multiple cell signaling proteins.²⁵ Role of pro-oxidants and anti oxidants in the anti-inflammatory and apoptotic effects of Curcumin (diferuloylmethane).²⁶ Potentiates the cytotoxicity of paclitaxel toward breast cancer cells in culture. (Aggarwal BB, 2005). Potentiates apoptotic effects of celecoxib against human pancreatic cancer cells. (Lev-Ari S, 2005). Protects against radiation-induced DNA damage in cultured human cells. (Parshad R, 1998). And these were just a few of the myriad of studies confirming the efficacy of curcumin.

Ongoing trials are continuing at esteemed research facilities including Rockefeller University Hospital, Johns Hopkins University, Cancer Institute of NJ, M.d. Anderson Cancer Center, Mass. General Hospital, Univ. of California Los Angeles, Kyoto University, Amsterdam Medical Ctr, St. George Hospital, Sydney, etc.

²⁴ Aggarwal S, Ichikawa H, Takada Y, Sandur SK, Shishodia S, Aggarwal BB. *Molecular Pharmacology*, 2006, 69(1):195-206

²⁵ Kunnumakkara AB, Anand P, Aggarwal BB. *Cancer Letters* 2008, 269(2):199-225

²⁶ Sandur SK, Ichikawa H, Pandey MK, Kunnumakkara AB, Sung B, Sethi G, Aggarwal BB. *Free Radical Biology & Medicine* 2007, 43(4):568-80

As mentioned in previous chapters curcumin has been studied for its ability to reduce inflammation and lower C-Reactive Protein markers. It suppresses the inflammation generated by the adipose tissue in the fat cells and operates at the gene level to activate the genes responsible for the inflammatory response. It also inhibits the proliferation of the vascular smooth muscle cells that increase the arterial wall thickness and is associated with atherosclerosis. And, as well, inhibits platelet aggregation which can increase the risk of clotting. Therefore, it is good protection for the heart.

Not all curcumin is able to be utilized by the body. This is why we recommend products containing the Curcumin C3 Complex.[®] When choosing a product you need to make sure the company has done the research and that the curcumin can get absorbed to work its “magic” The name C3 Complex has reference to its three main chemical compounds – Curcumin, Demethoxycurcumin and Bisdemethoxycurcumin – collectively known as Curcuminoids. Due to its broad positive impact on many physiological activities in the body, C3 Complex is the first of its kind in a category of nutrients as Bioprotectant. Types of research done on this particular curcumin were done at UCLA School of Medicine, University Hospitals of Cleveland, MD Anderson Cancer Center, Rutgers University, Tufts University School of Medicine, Massachusetts General Hospital, Brown University, and Tufts University School of Medicine. Research was done on cancer, Alzheimer’s, alcoholic Hepatitis, and Cystic Fibrosis.

While curcumin is safe for the majority of people, reported side effects are uncommon and are generally limited to mild stomach distress. There is some evidence to suggest that turmeric extracts can be toxic to the liver when taken in high doses or for a prolonged period of time. For this reason, turmeric products should probably be avoided by individuals with liver disease, heavy drinkers, and those who take prescription medications that are hard on the liver.

For more information on purchasing a fermented soy/curcumin beverage mix or supplement, please contact the company who provided you with this book.