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Natural Therapy and Immune Enhancement for Cancer

By Jonathan Campbell, Alternative Health Consultant

Cancer can be stopped naturally. For decades, alternative medicine practitioners have been treating people with cancer successfully, challenging the medical establishment and the pharmaceutical industry. Often they needed to do so in secret, for they could not fully explain why the therapies worked, and any challenge to the prevailing “wisdom” (and the revenue of the drug companies) was considered heresy. The science behind why these therapies have worked was a mystery until quite recently.

First, the immune system seemed to be a key player in these natural therapies. We know now that the creation of cancer cells in the body is quite common because of all of the toxic chemical residues in our food – pesticides and other accumulated chemicals. If your immune system is healthy, it finds these errant cells quickly and destroys them before they can do any damage. It attempts to isolate them. But if your immune system is weak, or there are too many cancer cells forming at once, it can be overwhelmed. Natural therapies strengthen your immune system.

Second, cancerous cells have a built-in mechanism to self-destruct, called “apoptosis” or “programmed cell death” which is supposed to be triggered by the body, probably by the immune system. But some chemical toxins appear to get in the way of this automatic self-destruct mechanism. Natural therapies contain food nutrients that enhance this self-destruct mechanism. These nutrients are thus called “selective chemotherapeutic agents” because they essentially kill only cancer cells. We are only beginning to understand how these nutrients accomplish this amazing feat, and there have been many studies that show that they work.

Finally, in 1991 a medical research doctor named Matthias Rath discovered the primary mechanism of many chronic diseases: an enzyme called protease, which is produced by cancer cells and viruses. Protease destroys collagen, the connective tissue around all of our cells. Cancer cells produce protease to spread. Natural therapies contain nutrients that are “protease inhibitors,” that is, nutrients that neutralize protease, therefore stopping cancer cells from spreading.

The Natural Cancer Regimen in this booklet contains all three of these components – nutrients that enhance the immune system, direct cancer cells to self-destruct, and inhibit protease.

You can see that this is a very different approach than is used by standard oncologists. They unfortunately believe that the only way to stop cancer is to use the medical equivalent of a machine gun, either radiation or toxic chemotherapeutic agents such as tamoxifen, both of which are non-selective – they kill healthy living tissue, including your immune system, while they kill cancer cells.

Lifestyle Support for the Natural Cancer Therapy

If you have cancer, the basic needs of the body are to create the environment in which the cancer cannot spread, to use safe, natural selective chemotherapeutic agents that cause cancer cells to self-destruct, and to rebuild the immune system, to enable it to stop any cancerous cells in the future. The following are lifestyle and dietary recommendations that complement the attached nutritional supplement regimen for cancer.

1. You need to eat a healthy diet to help rebuild and maintain your immune system. **Avoid dairy foods and “non-dairy” products containing casein (milk protein) as they inhibit the anti-cancer effects of some of components of the regimen.** I strongly recommend a vegan vegetarian diet (no meat, no dairy), for reasons elaborated below.
2. As much as possible, avoid ingestion of toxic and carcinogenic chemicals, such as over-the-counter pharmaceutical medications (Tylenol, allergy medications, sulfa drugs, etc.), diet drinks containing Aspartame (NutraSweet) or Saccharin. There are natural remedies that substitute for virtually any pharmaceutical medication.
3. Reduce ingestion of recreational or addictive drugs. All psychoactive drugs disrupt cell metabolism, and many of them are immunosuppressive, that is, they suppress or destroy the immune system. (This is especially true of intravenous drugs.)
4. Eliminate smoking and alcohol consumption. Cigarette "tar" (benzopyrene) is a powerful carcinogen and both it and nicotine are cytotoxic. Tobacco contains the cancer-causing, radioactive element polonium-210. Both smoking and drinking harm the immune system.
5. Avoid foods high in dioxin and PCBs - meat, shellfish, fish, and dairy products. Dioxin and PCBs are super-toxic hormone disruptors; they bio-accumulate in animal fat. It is extremely harmful to the immune system. But you must keep up your protein intake, so eat lots of soy (organic or non-GMO) or other high-protein beans and whole grain products. Soy drinks such as Spirutein and vegetarian burgers are ideal for boosting protein intake; choose the non-GMO or organic varieties in order to reduce exposure to pesticides. Eat lots of fresh vegetables and fruit. As with soy, buy organic food (if it is within your budget) to reduce pesticide exposure.
6. I strongly urge you not to use standard chemotherapy or radiation, which destroy healthy tissue and compromise the immune system. Obtain and read other information about immune system restoration, such as found in Andrew Weil's “Spontaneous Healing” and “8 Weeks to Optimum Health”, and the Encyclopedia of Natural Medicine by Michael Murray and Joseph Pizzorno. The human body can heal itself, given proper nutrition and environment.
7. If possible, reduce your dependency on prescription drugs, many of which are known cancer-causing agents or otherwise harm the immune system. Upon beginning the regimen you can stop taking statin drugs prescribed to lower cholesterol, as this regimen also naturally balances cholesterol counts.

Step by Step Introduction to the Natural Cancer Therapy

In order to allow your body to heal itself and overcome cancer, the Natural Cancer Therapy floods your body with specific nutrients to both enhance your immune system and also take specific steps to address the actions of the cancer cells.

When you first look at the array of nutritional supplements that you need to take, it may seem overwhelming. Let's approach this step by step.

Buying nutritional supplements

For economy, I suggest buying all of the supplements online from iherb.com or from Vitamin Shoppe stores, as their cost at small health food stores is much higher. For each supplement in the therapy, there is a total daily intake. Buy a few weeks' supply of each, so that you don't suddenly run out. It is very important to take the regimen consistently. Get a large, sectioned vitamin box so that you have a handy way of getting each supplement without having a large collection of bottles on the table.

Start slowly, build up

It is important to get to your target dose as quickly as possible, but you don't need to start all at once unless you have very aggressive or metastatic cancer. (If this is the case – if the cancer has already spread to other parts of the body, or it is an advanced or rapidly-growing cancer – you should advance to the highest dosages of each component as rapidly as possible).

You should periodically measure the cancer's size and activity either through direct scanning (Preferably MRI, but if not available, fast CT X-ray) or blood tests that measure the enzymes and proteins produced by cancer cells. (I advise my clients never to use PET scanning, as it injects cancer-causing radioactive substances into your body!)

In week 1, you can start by taking 2 grams (2000 milligrams) of each of vitamin C, and the amino acids lysine, proline, glycine, and arginine, and 750-1000 mg of green tea extract, along with a 25,000 IU capsule of beta carotene, a multivitamin, a calcium-magnesium multimineral supplement, and a teaspoon of MSM in water or juice at each meal.

In week 2, you can increase the amount of vitamin C at each meal (to 3-4 grams – 3000 or 4000 mg), increase the amino acids to 4 grams at each meal, and 1000-2000 mg of curcumin (turmeric extract) at each meal, add a vitamin E at breakfast, increase the green tea extract to 1500-2000 mg at each meal, and a zinc tablet between breakfast and lunch (always with a snack and only if the multimineral does not supply sufficient amounts).

In week 3, depending on the activity and size of the cancer, you can add quercetin (400 mg) and grape seed extract (100 mg) at each meal, which are powerful immune system builders, double the dosages of lysine, proline, and glycine to 4 grams (4000 mg) per meal, increase to two teaspoons of MSM in water or juice per meal, and increase the dose of curcumin at each meal to 1000 mg. Important note: if you have late-stage cancer, increase MSM dosage more slowly, over a period of 3-4 weeks.

Take aloe juice if you have indigestion (many cancer patients do), as it is an excellent healing agent, and ginkgo for peripheral circulation and maintaining blood flow to the brain. They are optional.

You should stay on the regimen until all signs that the cancer has been destroyed and replaced with healthy tissue. For maintenance (that is, for the rest of your life) you should stay on a moderated version of this therapy; see the section on Maintenance Regimen for the Natural Cancer Therapy.

If you have a very aggressive or metastatic cancer, please consider intravenous vitamin C (item 1 in the detailed regimen).

Important note

The list of nutrients for this Natural Cancer Regimen is rather extensive. If there are financial or other considerations that make it impossible to obtain or use all of them, the most important are:

Vitamin C (use calcium ascorbate - "buffered" vitamin C - if the stomach is sensitive) (powdered is cheapest), or the new Lipospheric C produced by Livon Labs (see the regimen entry below)

Lysine amino acid (powdered is cheapest)

Proline amino acid (powdered is cheapest)

Glycine amino acid (powdered is cheapest)

Arginine amino acid (don't get powder – it tastes absolutely vile)

Tyrosine amino acid (only for blood marrow cancers, powdered is cheapest)

Decaf Green tea extract

MSM

Flaxseed Oil

Grape Seed Extract

Turmeric Extract

easy-to-digest protein (in other words, keep eating wholesome meals, and use soy or whey protein shakes if appetite is down)

hi-potency multivitamin/multimineral

Calcium/magnesium supplementation

At least 8 cups (2 quarts, 2 liters) of water or other non-caffeinated liquids per day

The most important consideration is that you must be consistent in taking the regimen, whether you take just the minimum set of supplements above or the entire list. If you miss a dose, do not "double" because you'll probably get diarrhea from too much vitamin C at once. Just get back on track as soon as you can.

The other thing to consider, in addition to the oral regimen, if the cancer is advanced and/or aggressive, is getting intravenous vitamin C infusions, if they are affordable. See the item on this therapy, below.

The Natural Anti-Cancer and Immune Regimen

This regimen is based on the clinical research of Dr. Matthias Rath, Dr. Robert Cathcart, and Dr. Hugh Riordan with a few additions from the Encyclopedia of Natural Medicine for general immune health.

This should be tailored to your individual case, based on the stage of the disease, and your current health status. It may be used by itself or in addition to the medications you are taking.

I have indicated the most important components of the regimen with a "***" marking, and the next level of importance with a single "*". I recommend using all components at full dosages for maximum efficacy. Items 1-15 are the essential components of the regimen.

The number of supplements specified here is considerable. If you have difficulty taking this many pills and capsules at a time, my suggestion is to buy them in capsule form rather than tablets, and then open up the capsules into a flavored soy drink (see below) at each meal. Unless otherwise specified, I suggest purchasing the supplements from iherb.com or Vitamin Shoppe stores (or their website vitaminshoppe.com) to get high quality supplements at the lowest prices.

1. **If you have an aggressive or metastatic cancer, you should consider finding a doctor who is willing to administer *intravenous* Vitamin C in very large doses - 50-100 grams per day. These dosages of Vitamin C are safe for normal cells. But it is transformed by cancer cells into minute amounts of hydrogen peroxide, which then destroys the cancer cells from within. Medical centers with intravenous infusion clinics, such as the Marino Center in Cambridge, Massachusetts (<http://www.marinocenter.org>), The Center For The Improvement Of Human Functioning International in Wichita, Kansas (<http://www.brightspot.org>), and Dr. Joe Brown's Medical Centers in Tempe, Arizona (<http://www.drjoebrown.com>) have both the facilities and medical staff that can prescribe and administer intravenous vitamin C. These can also be obtained at "chelation clinics" where they treat people (esp. children) who have lead poisoning. You can use google.com to find these clinics – type “chelation clinic” and the name of the nearest city. Look for clinics that are not connected with hospitals or colleges.

The following are links to web pages that describe the regimen and provide the preparation and administration protocol that you would bring to the clinic:

<http://www.healthy-again.net/cancerinextremis.htm> (description of the therapy)

<http://www.healthy-again.net/recnac2.htm> (preparation and administration protocol)

2. **Soy protein drink – ¼ cup (about 18 grams) of non-GMO or organic brand, such as Spirutein non-gmo or Naturade Organic, mixed in a blender with 8 fl. oz. (250 ml) of organic soy milk (such as White Wave Silk), 2-3 times per day. Alternatively, you can eat a package of tofu each day, which provides about 35 grams of soy protein per day. Soy protein contains two anti-cancer protease inhibitors, genistein and diadzen – they stop cancer cells from spreading. This provides a large proportion of the protein you need for the day. If you use this item, you can eat lower-protein foods for the rest of your diet; wheat or rice complement soy very well.
3. **Vitamin C (oral) - work up to 20,000 or more per day, taken with food, coating stomach with milk or soymilk to avoid stomach upset. (There is no toxic dose. Some

people who are very ill can take as much as 100,000 mg per day.) You may use buffered C (usually calcium ascorbate) or Ester-C for up to 20,000 mg, but the remainder (if any) must be ascorbic acid (look at the label) because the buffered types will overdose your mineral intake (calcium and/or magnesium). Start at 2000 mg (2 grams) at each meal for several days, then take between-meal doses of 2000 mg (2 grams) each, coating stomach with milk or soymilk. Carefully increase frequency and dose (up to 4000 mg - 4 grams - per dose) until you reach your "bowel tolerance dose" (very loose bowels) and then back off slightly from this dose. You can mix calcium ascorbate crystals or Ester-C with orange juice; follow all doses with food or something that will coat your stomach, such as soy drink. Note: If you are using calcium ascorbate and are taking more than 10,000 mg of it, you do not need to take extra calcium supplements.

There is a new form of vitamin C, called Lipospheric C, developed by Dr. Thomas Levy, which is much more absorbable, and therefore much more effective, than ordinary vitamin C. It is also quite expensive – about \$1.30 per 1000 mg. If you take Lipospheric C, you can take 5000-10,000 mg per day, and you will be providing your body with far more vitamin C than you possibly could with ordinary oral supplemental C.

4. **Lysine - 12 grams (12,000 mg) per day. Combined with vitamin C, this is a natural protease inhibitor. This is most conveniently taken in powder form.
5. **Proline – 12 grams (12,000 mg) per day. Combined with vitamin C, this is a natural protease inhibitor. This is most conveniently taken in powder form.
6. **Glycine – 12 grams (12,000 mg) per day. This is a natural protease inhibitor. This is most conveniently taken in powder form.
7. **Arginine – 12 grams (12,000 mg) per day. This is a natural protease inhibitor. Take this in capsules or tablets. The powder is utterly vile in taste.
8. **Tyrosine – 12 grams (12,000 mg) per day. This is only needed if you have a blood marrow cancer such as leukemia or multiple myeloma. It is most conveniently taken in powder form.
9. ****Decaffeinated** Green Tea Extract – 4-6 grams (4,000-6,000 mg) per day. This, in combination with vitamin C and the amino acids lysine and proline, has been documented to stop metastasis of cancer cells and create the conditions for apoptosis (programmed cell death) of cancer cells. Green tea polyphenols are also powerful anti-bacterial and anti-viral agents. A good brand is Life Extension Mega Tea Extract, Decaffeinated, available at iherb.com and other online stores.
10. **MSM – 12-24 grams (12,000-24,000 mg) per day, in 3-4 doses. MSM is an important oxygen carrier that creates the conditions for apoptosis (programmed cell death) of cancer cells. Take in powder form mixed with water, perhaps with stevia for sweetener. Please also take chlorella (see below), especially if you have any silver (amalgam) tooth fillings. MSM mobilizes heavy metals, allowing them to be filtered and removed by your liver. Important note: if you have late-stage cancer, increase MSM dosage more slowly, over a period of 3-4 weeks.

11. **Organic flaxseed oil – 2-6 tablespoons per day, depending on severity of cancer, in 3 doses. Purchase at local health food store, as it needs to stay refrigerated. Flaxseed oil provides essential fatty acids necessary for cell repair and maintenance, and has also been shown to be an effective anti-cancer agent when taken with highly sulfurous food (cottage cheese) or MSM. Purchase at local health food store, as it needs to stay refrigerated.
12. **Grape seed extract (95% proanthocyanidins): 600 mg/day. This antioxidant enhances immunity and is a natural, safe anti-cancer agent.
13. **High-dosage multivitamin/multi-mineral complex per day.
14. **Curcumin (Turmeric Extract): 4,000-12,000 mg per day with meals. Curcumin has a powerful anti-cancer and anti-viral effect.
15. **Calcium/magnesium - 1000 mg calcium, 500 mg magnesium, per day. Most people don't get enough of these essential minerals. If you encounter muscle cramps day or night, you can increase these to 1500 mg calcium/750 mg magnesium. When you have blood work done by your doctor, make sure he or she checks the levels of these minerals, and increase accordingly if deficient.
16. **Keep fluid levels high by drinking 2-4 quarts (8-16 cups, 2-4 liters) of fluid per day. This is essential both for the high vitamin intake and also to flush toxins out of the body.

The following are recommended, but not essential, for treatment of cancer.

17. *Beta Carotene – 100,000-200,000 IU per day, in 2 doses. Your body makes vitamin A from beta carotene, a natural substance extracted from carrots and other yellow and orange vegetables. (A large carrot provides 25,000 IU of beta carotene.) This is the safest way to obtain vitamin A, since Beta carotene is very safe in extraordinarily large doses, whereas vitamin A oil is toxic in large doses.
18. *Vitamin D3 – 4000 IU per day, in 2 doses.
 Recently published research indicates that a minimum of 4000-5000 IU vitamin D3 should be consumed daily (unless you are light-skinned and get daily full-body sun exposure with no sunscreen). Many foods are supplemented with D3, so I have recommended this extra daily supplementation at the 4000 IU level.
19. *Ginger: 4000-8000 mg per day with meals. Ginger's anti-inflammatory effect inhibits cancers.
20. *Co-Q10 – over several weeks, build up to 500-1000 mg per day. Co-Q10 has a powerful anti-cancer effect.
21. *Quercetin: 800 mg three times a day, about 20 minutes before each meal. This antioxidant enhances immunity and is a natural anti-inflammatory. Some vitamin manufacturers combine quercetin with bromelain, which is an excellent combination.
22. *For prostate cancer, Saw Palmetto Extract – 320 mg per day

23. *If there is liver involvement (primary liver cancer, liver metastases, or hepatitis), add Milk Thistle Extract, 1200 mg/day, to help rebuild healthy liver tissue.
24. *Vitamin D3 – unless you get full-body sun exposure with no sunscreen, take 4000 IU vitamin D3 per day.
25. *Vitamin E - over several weeks, build up to 1600 IU per day. (Carefully monitor blood pressure and heart rate).
26. *Zinc/Copper - Zinc 50 mg per day with copper 2-3 mg per day, taken with meals because it can upset the stomach. (Check the zinc and copper content of the multivitamin/multimineral supplement. Take enough to reach 50 mg/2-3 mg total.)
27. *Selenium – 400 micrograms per day. (Check the selenium content of the multimineral supplement. Take enough to reach 400 micrograms total.)
28. Glucosamine sulfate – 1500-2000 mg per day. Glucosamine helps protect and rebuild connective tissue. (Purchase synthetic glucosamine if you are allergic to seafood.)
29. Lecithin – 2 tablespoons granules per day. Lecithin provides the raw materials for cellular repair.
30. *Chlorella powder – 1 teaspoon or 3000 mg with every meal, at the very beginning of each meal. Chlorella safely removes heavy metals from the intestinal tract. (Note: Powdered chlorella is much less expensive than tablets.) Start with ½ teaspoon or 1500 mg at each meal, and increase to 1 teaspoon or 3000 mg per meal over several days. Note: some people are sensitive to chlorella. If it causes you stomach or intestinal upset, try using another “green food” such as Natural Factors Enriching Greens or Garden of Life Perfect Food.
31. N-Acetyl-Cysteine – 1000 mg/day. Helps build the immune system, increasing the production of the important antioxidant glutathione.
32. Aloe gel - drink about 8 fluid ounces (1 cup, 250 ml) per day, especially if you have stomach or intestinal problems.
33. Ginkgo Biloba - 240 mg per day for increasing and maintaining blood flow in the brain and extremities.

Note on Lysine, Proline, Glycine, and Arginine

The safety margin for lysine, proline, glycine, and arginine is quite large. Presented above is a good starting dosage to inhibit the growth of cancer cells. If you discover, through regular testing, that the cancer is not under control, you can safely increase the dosage of these three amino acids to as much as 15-20 grams each per day, provided you increase fluid intake to 3-4 quarts per day. You should also seriously consider pursuing the Riordan intravenous vitamin C therapy, described above in the section on vitamin C.

Important Note and Disclaimer

Jonathan Campbell is a health and environment researcher and consultant. He is not a physician, and the information, suggestions, and recommendations that he provides are not prescriptions. When you pursue alternative remedies, you are taking full responsibility for your own health decisions, and it is recommended that you consult with a qualified physician to monitor your progress. This is especially the case if you currently take pharmaceutical drugs, as your dosage requirements will likely change as your body heals.

Many cancer patients have used a subset of the therapeutic supplement regimen described above to successfully treat and reverse their disease condition. However, it is important also to understand that no cancer therapy, no matter how well tested or proven, can be guaranteed to be effective for every case of cancer. Advanced and metastatic cancers often completely destroy tissue and essential organs vital for life, and no therapy, no matter how effective, can reverse this destruction.

Maintenance Regimen for The Natural Cancer Therapy

Once you have successfully eliminated the cancerous tissue in your body and your health is restored, you will need to keep up a strong immune system maintenance regimen to prevent re-occurrence of cancer. The following nutrients will help you to do this.

- a. High-dosage multivitamin/multimineral complex daily.
- b. Vitamin C - 6,000-20,000 mg (6-20 grams), in the form of crystals or capsules, keeping near bowel tolerance (as discussed in the primary regimen). Take crystals with orange juice; follow all doses with food or something that will coat your stomach, such as soy drink.
- c. Lysine, Proline, Glycine, and Tyrosine – 6000 mg (6 grams) per day each, in divided doses (with meals). Combined with vitamin C, these are natural protease inhibitors. These are conveniently taken as powder mixed in flavored shakes or juice. (Use stevia if necessary to sweeten.)
- d. Green Tea Extract – 1000-1500 mg (1-1.5 grams) per day.
- e. MSM – 12,000=24,000 mg per day.
- f. Vitamin D3 – 4000 IU per day, unless you are light-skinned and get daily full-body sun exposure with no sunscreen.
- g. Vitamin E – 800-1200 IU per day. (Check the Vitamin E content of the multivitamin/multimineral supplement. Take enough to reach a total of 800-1200 IU per day.)
- h. Beta Carotene – 25,000-50,000 IU per day, in 2 doses. This is the safest way to obtain vitamin A, since Beta carotene is very safe in extraordinarily large doses, whereas vitamin A palmitate is toxic in large doses. (Check the Vitamin A/beta carotene content of the multivitamin/ multimineral supplement. Take enough to reach a total of 25,000-50,000 daily.)
- i. Selenium – 200 micrograms per day. (Check the selenium content of the multivitamin/multimineral supplement. Take enough to reach 200 micrograms total.)
- j. Calcium/magnesium – 1000-1500 mg. calcium, 500-800 mg magnesium, per day.
- k. *Zinc/Copper - Zinc 50 mg per day with copper 2-3 mg per day, taken with meals because it can upset the stomach. (Check the zinc and copper content of the multivitamin/multimineral supplement. Take enough to reach 50 mg/2-3 mg total.)
- l. Keep fluid levels high by drinking ½ to 1 gallon (8 to 16 cups, 2-4 liters) of fluid per day. This is essential both for the high vitamin intake and also to flush toxins out of the body.

Optional supplements:

- m. Curcumin (Turmeric Extract): 500 mg per day with meals. Curcumin has a powerful anti-cancer and anti-viral effect.

- n. Ginkgo Biloba - 120 mg per day for increasing and maintaining blood flow in the brain and extremities.
- o. Grape seed extract (95% proanthocyanidins): 100 mg/day
- p. Aloe gel - drink 1-2 fluid ounces per day, especially if you have stomach or intestinal problems.

Why Does This Natural Cancer Therapy Work?

The natural cancer therapy is based on the research of Dr. Matthias Rath, who worked with the Nobel prize-winning chemist Linus Pauling on heart disease in the early 1990's. While doing that research, Rath discovered something quite extraordinary: all disease processes – cancer, heart disease, bacterial and viral diseases – spread through the body using the same mechanism. They all spread by destroying collagen, and they all use protein-dissolving enzymes called proteases.

Cancer cells arise from a toxic chemical, biological, or radiation exposure. Their DNA has been mutated so they are no longer functional, and they begin to reproduce rapidly. These mutant cells use protease to dissolve the collagen around them and thus make room for more cancer cells. Rath discovered that the collagen-building substances vitamin C and lysine slow down or stop the action of protease – they are protease inhibitors. In test-tube experiments, he verified that the destruction of collagen and the growth and spread of cancer cells was slowed or stopped by using these natural protease inhibitors. Later he added proline, the other amino acid prominent in collagen.

Using natural amino acids for protease inhibition was a brilliant insight, and very simple to explain. The amino acids act as “decoys” for the protease molecules: they neutralize the protease.

In the last year, he and other scientists at his research laboratories discovered that when they added a powerful anti-cancer extract from ordinary green tea to these other protease inhibitors, the combination completely halted spread and metastasis (off-site spread) of cancer for a number of types of cancer cells.

The Natural Cancer Therapy is a complete therapy. It can be used whether or not you are undergoing (or have undergone) standard oncological treatments. By itself, this regimen has been shown to reverse cancer, inhibit cancer spread and metastasis and enhance health. Taken with (or after) standard oncology treatments, the regimen helps to rebuild and maintain the immune system, reduce the side effects of those treatments, and prevent metastases.

The natural cancer regimen works in six ways:

1. The five amino acids in the regimen – lysine, proline, glycine, arginine, and tyrosine – stop the spread of cancer cells by inhibiting the action of proteases created by the cancer cells. In other words, the protease molecules are neutralized by the amino acids which together act as “decoys” to neutralize the protease, keeping it from destroying collagen in living tissue. The cancer cells then become isolated and then cannot reproduce or spread.
2. The regimen builds and strengthens your immune system by supplying the raw materials (vitamin C, vitamin E, selenium and zinc) for building healthy white blood cells, which can identify, surround, and destroy unhealthy and cancerous cells.
3. The regimen contains four known selective chemotherapeutic agents: Vitamin C, MSM, green tea catechins and curcumin. Unlike non-selective pharmaceutical chemotherapies such as tamoxifen which are toxic to all cells in the body, Vitamin C, MSM, GTCs and curcumin

are only toxic to cancer cells. They trigger a mechanism called apoptosis – programmed cell death – but only in abnormal and cancerous cells. They are perfectly safe to normal cells.

4. The vitamin C in the regimen acts as a toxin “sponge mop.” Often the cause of the cancer – toxic chemicals – are still present in the body, and cancer cells also produce toxins (other than proteases) that can destroy other cells. Vitamin C directly neutralizes some of these toxins into harmless chemicals (that are then excreted), or helps other detoxifying body mechanisms, such as in the liver.
5. The vitamin C, lysine, and proline in the regimen allow your body to quickly rebuild and regenerate the connective tissue – collagen – that has been destroyed by the cancer cells.
6. The regimen provides sufficient nutrients – vitamins and minerals – to restore normal cellular metabolism. These nutrients are often deficient in cancer patients.

In summary, this cancer remedy is unique in that it uses completely natural food-grade nutrients to enhance the body’s innate cancer-fighting and restorative abilities.

Why is this therapy superior to other natural therapies?

This regimen of this therapy is built upon the very “raw materials” – lysine, proline, and vitamin C – that build and rebuild the connective tissue that cancer cells are either attempting to destroy or have already destroyed. The regimen provides multi-faceted protection against the cancer cells – protease inhibition as well as immune enhancement – and at the same time enabling the body to heal and rejuvenate. In lower doses, it can be used as a lifetime regimen to maintain health.

Is this natural cancer therapy safe?

The cancer therapy nutrients are ordinary food nutrients. It has **no side effects**.

Vitamin C is an essential nutrient needed for dozens of cellular systems – tissue reconstruction and regeneration, cholesterol recycling, and white blood cell creation to name just a few. Most animals produce their own, but humans must get it in food or nutritional supplements in large quantities – much larger than the federal RDA – to remain healthy. (For more information about the safety of vitamin C, see the section entitled “Is vitamin C safe?”)

Beta carotene is derived from carrots or other yellow-orange vegetables. It is proven safe in enormous quantities. Your body makes as much vitamin A as it needs from it; vitamin A is needed for healing and to maintain eye health. Any excess of beta carotene is safely excreted.

Lysine, proline, glycine, and arginine are ordinary amino acids derived from protein such as soybeans. The concentrations provided by the regimen are higher than in normal food, but consider: the semi-solid part of our bodies – mostly made of collagen – is composed primarily of lysine and proline. This is the very tissue that the cancer cells are destroying in order to spread.

There are many studies showing the effectiveness of green tea catechins and curcumin as natural anti-cancer agents, yet they are completely non-toxic in enormous quantities since they

are common food and drink nutrients. Turmeric is the main ingredient in Indian curries, and green tea has been one of the most popular drinks in China and Japan for thousands of years.

Aloe juice has been safely used for many years for gastrointestinal problems, which often accompany cancer.

Gingko biloba has been used for many years for helping middle-aged and elderly people maintain brain health.

Does this cancer regimen interfere with chemotherapy or radiation therapy?

The regimen does not interfere with these oncology procedures; in fact, the vitamin C in the regimen reduces the side effects of these drugs by neutralizing toxins produced by their action in your body. However, as mentioned earlier, I strongly recommend against using these procedures because they harm healthy tissue and the immune system.

What about other medications and insulin?

If you are currently taking a statin drug to reduce cholesterol, you can discontinue using it once you have started taking this regimen. Having a sufficient blood level of vitamin C will naturally reduce and balance your cholesterol count.

If you are taking other heart or blood-pressure remedies (e.g., beta blocker, calcium channel blocker), ask your doctor to carefully monitor the symptoms that these drugs are supposed to address, and taper off the dosage as your cardiovascular system becomes healthy again on its own.

The prescription drugs used for many common ailments are harmful to the immune system, and some of them are known cancer-causing agents. It is a good idea to find safe, natural alternative treatment for these ailments and reduce your dependence on pharmaceutical drugs. Please refer to the natural medicine books referred to in the section at the beginning of this manual entitled “Lifestyle Support for the Natural Cancer Therapy.”

If you have diabetes, it is imperative that you monitor blood sugar closely and frequently, as your need for insulin will likely decrease. This is especially true in the case of Type II (age-onset) diabetes.

Why is there a range of dosage?

For people with cancer, the smaller dose is the beginning dose is for early-stage diagnosis and the larger dose is the target dose for advanced, aggressive, or metastatic cancer. For most people, taking this number of supplements is quite different from what they are used to, and a bit overwhelming. Furthermore, it takes your body a few days to adjust and begin to use the amounts of vitamin C in the regimen. Elevate your dosage to the target dosage range as soon as practicable.

Why don't most doctors know about this therapy?

This therapy and other natural remedies for chronic illness are not known by most doctors because their primary source of information is the pharmaceutical industry, which has no incentive to publicize non-patentable, inexpensive, natural remedies or cures. Doctors are literally barraged each day with drug company reports, press releases, and free samples. Meanwhile, we are treated to advertisements for these expensive new pharmaceutical “remedies” on television and in virtually every newspaper and magazine in the United States, so that we know just which drugs to ask for from our doctors.

The conventional treatments for chronic illnesses do not generally cure or prevent these illnesses, but instead call for expensive maintenance drugs or toxic chemicals that destroy the immune system and inhibit healing.

These maintenance and/or toxic therapies represent hundreds of billions of dollars per year in drug company revenue. Thus cheap, non-patentable natural remedies and cures represent a major threat to these companies.

Is vitamin C safe?

Vitamin C is probably the safest nutritional supplement. In fact there is no toxic dose. It is proven safe in huge quantities. Intravenously it has been in quantities exceeding 200 grams per day with no side effects. Dr. Ian Brighthope of Australia and Dr. Robert Cathcart in California use 100+ gram vitamin C infusions for their AIDS patients, with no adverse effects. Its only “side effect” is mild diarrhea if you take too much orally. Dr. Hugh Riordan has been treating cancer patients with high-dosage vitamin C intravenous infusions for more than 10 years. Some AIDS patients have taken enormous quantities orally – upwards of 100 grams per day – for extended periods of time, again with no side effects.

Almost all animals on earth produce their own vitamin C, at concentrations between 30 and 300 times as much as the FDA says we need. Humans, monkeys, guinea pigs, and a few other animals have a genetic defect that prevents them from turning blood sugar into ascorbate – vitamin C. When most animals are under stress – when they are scared or ill or exposed to toxins – their internal vitamin C factories go into overdrive and provide this nutrient in very large quantities.

What about the vitamin C scares?

There have been no documented cases of anyone who has ever had adverse side effects from taking very large doses of vitamin C, other than the diarrhea mentioned above, which is simply the indicator that you have exceeded the dose that your body is using. But for many years, the pharmaceutical industry has gone to great lengths to scare people away from vitamin C. These companies have huge investments in expensive prescription drugs that attempt to treat the symptoms of diseases that would be addressed, cured, or prevented easily and cheaply with the same dosage of vitamin C as is found in the blood of most animals.

The scares have accelerated since 1999. One researcher noted finding vitamin C in a cancer tumor, and then reported that vitamin C might induce cancer or interfere with anti-cancer agents.

If he had understood the action of vitamin C against cancer, he would have realized that the vitamin C that he found was contained in leukocytes — our body's natural immune defense mechanism against cancer — that had collected in the tumor to attempt to destroy it!

A few months later, two researchers reported “thickening of the artery wall” from vitamin C, assuming that the arteries were being blocked. In fact, they did not test for blood flow, and if they, too, had understood the action of vitamin C, they would have realized that the thickening was in fact related not to the blocking of the arteries, but rather to the strengthening of the arteries that was due to proper collagen formation.

Finally, in June of 2001 a researcher at a university that receives large amounts of funding from drug companies reported, with great media attention, a test-tube experiment in which he analyzed the action of vitamin C on “peroxidized lipids” (blood fats that had been made toxic by extreme free radical damage) and reported that the resultant compounds might be carcinogenic. This researcher failed to mention that this test tube reaction has been known for several years and that no such reaction has ever been found in animals or humans. He also failed to mention that peroxidized lipids do not form in the first place in a person who takes adequate vitamin C. Finally, he failed to mention that peroxidized lipids are extremely toxic to the body anyway, so that claiming that they turned into something toxic when exposed to vitamin C is misleading at best. This might be equivalent to saying, “When I applied vitamin C to cyanide I got something poisonous.”

It is interesting to note, as has Dr. Matthias Rath, that the timing of these scares coincides with the meetings of the Codex Alimentarius commission of the United Nations. In his public lectures Dr. Rath has pointed out that this commission is strongly influenced by the major pharmaceutical companies.

Where can I find more information about this therapy?

Dr. Matthias Rath maintains a website devoted to his cancer research, at:

<http://www.stopping-cancer-naturally.org>

where you can get copies of his books about cancer and other recent research.

Hydrogen Peroxide Therapy

There is some good evidence and theoretical underpinnings that hydrogen peroxide inhalation is an effective therapy against cancer. A man named Bill Munro popularized the therapy in a now-famous video on YouTube (type “Bill Munro hydrogen peroxide” to google to find the link). Hydrogen peroxide (H₂O₂) is the chemical formed in cancer cells by Hugh Riordan’s high-dosage intravenous vitamin C. Munro’s experience (as well as those of many of his followers) has shown that inhaling it can be beneficial to stopping and eradicating cancer, and it appears to have few, if any side effects. Mr. Munro was able to completely cancer using this technique, more than a decade later he is still cancer-free.

One beneficial side effect is that the therapy appears to be useful in reducing the severity of emphysema and other forms of COPD. **But if you try this therapy for cancer and you have COPD, please be warned that you must stop taking cough suppressants if you are currently taking them. This would seem like common sense, but I will repeat it anyway: Any agent that treats COPD does so by liquefying hardened materials in the lungs, and if you don’t cough to bring them out of your lungs, you will literally drown.**

Safe Testing Protocols for Cancer

There are many ways that doctors find cancerous tumors or prove conclusively that a tumor is malignant (cancerous). Some of these are relatively safe. Others can be quite harmful.

Tumor Marker Blood Tests

Many cancers produce proteins in the blood, called “tumor markers” by oncologists and cancer researchers. Thus a simple blood sample can be used to detect their presence. Once a significant cancer marker is found, other tests can be used to determine the size and scope of the cancer.

AMAS

The most accurate test of for malignancy is called the AMAS. It can be used both to screen for malignancy and also to test whether a cancer therapy has been successful at eradicating the cancer, to a very high degree of certainty. It is a simple blood test which measures a human antigen level that is high when there is a malignancy anywhere in the body. Unfortunately, most oncologists and doctors have not heard of it. The AMAS test is available from Oncolab in Boston, Massachusetts. See their website at <http://www.oncolabinc.com>, or call them or send an email to them. If your doctor is not familiar with the AMAS, they can provide him or her with the information needed to administer the test.

E-mail: info@oncolabinc.com

Phone:

(800) 922-8378

(617) 536-0657 (fax)

Address:

Oncolab, Inc.

36 The Fenway

Boston, MA 02215

NCI Cancer Marker Tests

The list of standard cancer marker blood tests is conveniently provided for us by the National Cancer Institute. I have reprinted and included this list in this booklet.

Magnetic Resonance Imaging (MRI)

MRI is the safest procedure that can be used to detect tumors or other unusual tissue masses in soft tissue, such as breast cancer or soft tissue sarcoma. MRI centers can be found in most metropolitan areas. For breast cancer scanning, a special “breast coil” is used.

Modern MRI equipment is as accurate as Computerized Tomography (CT) but does not expose your body to x-rays, which can cause DNA damage and cancer.

Potentially harmful techniques and procedures:

1. Biopsy – this procedure removes a small amount of tissue from a suspected area or tumor. While it is important to find out whether a tumor is malignant or not, a biopsy of a malignant tumor opens a channel for malignant cells to spread to the rest of the body. Your immune system attempts to create a “wall” between diseased cells and healthy ones, and makes every attempt to isolate the cancerous growth. Biopsies cut open the tumor and expose it to the healthy tissue around it, providing an opportunity for the cancerous cells to spread. If you do have a biopsy, it is very important that you use the Natural Cancer Therapy regimen to stop any spread of cancer from the site of the biopsy.
2. Mammogram – used almost universally to detect breast cancer, this procedure squeezes the breast tissue so that an X-ray can detect cancer cells. Some physicians and other health providers are concerned that the high pressure exerted on any tumors present could break open the tumors and provide a channel for spreading them to surrounding tissue and other parts of the body. In any case, mammograms are not very accurate, and provide many false positives (it is difficult to distinguish between milk glands and cancerous tissue) and false negatives (active cancers are undetected).
3. PET – Positron Emission Tomography – in this procedure radioactive salts are literally injected into your bloodstream and then the radiation from your body is used to make images of your organs. Internal radiation is extremely hazardous to your health – it is known to **cause** cancer: it damages a large amount of DNA because it is internal and the exposure is prolonged.
4. Nuclear Medicine Breast Imaging, sometimes called Scintimammography or Sestamibi or Miraluma – Similar to PET, this procedure is sometimes used to detect breast cancer, and involves injecting a radioactive substance called technetium-99 into your bloodstream, which collects in breast cancer cells. As mentioned above, this is internal radiation, which is extremely hazardous to your health as it is a known cause of cancer.

As a health and environmental researcher, I am appalled that procedures that inject radioactive substances into the body – and therefore expose the entire body to prolonged radiation damage – have become widespread. Internal radiation injury from nuclear bomb fallout of the 1960’s and radiation leaks from nuclear power plants are one of the larger sources of cancers in the US. I can say unequivocally that these last two techniques – PET and Sestamibi – should never have come into use.

Tracking your progress

Once you know that you have a cancerous tumor and you are using the Natural Cancer Therapy, you will need to be able to find out whether the cancerous area is responding to treatment.

Blood testing for cancer markers is the least intrusive and least expensive way to track your progress. Measuring these markers on a regular basis can then tell us whether the cancer is growing or shrinking – it becomes a measure of the number of cancerous cells and their activity.

Cancer markers are usually measured when the cancer is suspected or detected. If this was not done, you should schedule this blood test as soon as possible. This first test – and the amount of each marker present specific to your cancer – is called the “baseline.”

Then, depending on whether the cancer was slow-growing or aggressive (or had spread to other parts of the body, called “metastatic” or “metastasized”) you should schedule blood tests at regular intervals (shorter for aggressive cancers, perhaps every week, and longer for slow cancers, perhaps every month).

You and your doctor can then see whether the therapy is effective, by comparing it with the “baseline” test: if the amount of each relevant marker has decreased, then the cancer is shrinking. If it remains the same or increases, it means that you need to increase the dosage of protease inhibitors and selective chemotherapeutic agents in the regimen – the five core components: vitamin C, l-lysine, l-proline, green tea extract, and curcumin (turmeric extract).

At longer intervals, you should also recheck the actual cancerous lesions with an MRI, discussed above, to verify that the cancers are shrinking.

Cancer Facts

(reprinted from the National Cancer
Institute website)

[CIS Home](#)
[Cancer.gov](#)
[Dictionary](#)
[Search](#)

Date reviewed: 4/27/1998

Tumor markers

[Tumor markers](#) are substances that can often be detected in higher-than-normal amounts in the blood, [urine](#), or body [tissues](#) of some patients with certain types of [cancer](#). Tumor markers are produced either by the tumor itself or by the body in response to the presence of cancer or certain [benign](#) (noncancerous) conditions. This fact sheet describes some tumor markers found in the blood.

Measurements of tumor marker levels can be useful—when used along with [x-rays](#) or other tests—in the detection and [diagnosis](#) of some types of cancer. However, measurements of tumor marker levels alone are **not** sufficient to diagnose cancer for the following reasons:

- Tumor marker levels can be elevated in people with benign conditions.
- Tumor marker levels are not elevated in every person with cancer—especially in the early [stages](#) of the disease.
- Many tumor markers are not specific to a particular type of cancer; the level of a tumor marker can be raised by more than one type of cancer.

In addition to their role in cancer diagnosis, some tumor marker levels are measured before treatment to help doctors plan appropriate therapy. In some types of cancer, tumor marker levels reflect the extent (stage) of the disease and can be useful in predicting how well the disease will respond to treatment. Tumor marker levels may also be measured during treatment to monitor a patient's response to treatment. A decrease or return to normal in the level of a tumor marker may indicate that the cancer has responded favorably to therapy. If the tumor marker level rises, it may indicate that the cancer is growing. Finally, measurements of tumor marker levels may be used after treatment has ended as a part of followup care to check for [recurrence](#).

Currently, the main use of tumor markers is to assess a cancer's response to treatment and to check for recurrence. Scientists continue to study these uses of tumor markers as well as their potential role in the early detection and diagnosis of cancer. The patient's doctor can explain the role of tumor

markers in detection, diagnosis, or treatment for that person. Described below are some of the most commonly measured tumor markers.

[Prostate-Specific Antigen](#)

Prostate-specific antigen ([PSA](#)) is present in low concentrations in the blood of all adult males. It is produced by both normal and abnormal prostate [cells](#). Elevated PSA levels may be found in the blood of men with benign prostate conditions, such as prostatitis (inflammation of the prostate) and [benign prostatic hyperplasia](#) (BPH), or with a [malignant](#) (cancerous) growth in the prostate. While PSA does not allow doctors to distinguish between benign prostate conditions (which are very common in older men) and cancer, an elevated PSA level may indicate that other tests are necessary to determine whether cancer is present.

PSA levels have been shown to be useful in monitoring the effectiveness of prostate cancer treatment, and in checking for recurrence after treatment has ended. In checking for recurrence, a single test may show a mildly elevated PSA level, which may not be a significant change. Doctors generally look for trends, such as steadily increasing PSA levels in multiple tests over time, rather than focusing on a single elevated result.

Researchers are studying the value of PSA in [screening](#) men for prostate cancer (checking for the disease in men who have no [symptoms](#)). At this time, it is not known whether using PSA to screen for prostate cancer actually saves lives. The [National Cancer Institute](#)-supported Prostate, Lung, [Colorectal](#), and [Ovarian](#) Cancer Screening Trial is designed to show whether the use of certain screening tests can reduce the number of deaths caused by those cancers. For prostate cancer, this trial is looking at the usefulness of regular screening using digital rectal exams and PSA level checks in men ages 55 to 74.

Researchers are also working on new ways to increase the accuracy of PSA tests. Improving the accuracy of PSA tests could help doctors distinguish BPH from prostate cancer, and thereby avoid unnecessary followup procedures, including biopsies.

[Prostatic Acid Phosphatase](#)

Prostatic acid phosphatase (PAP) is normally present only in small amounts in the blood, but may be found at higher levels in some patients with prostate cancer, especially if the cancer has spread beyond the prostate. However, blood levels may also be elevated in patients who have certain benign prostate conditions or early stage cancer.

Although PAP was originally found to be produced by the prostate, elevated PAP levels have since been associated with testicular cancer, [leukemia](#), and [non-Hodgkin's lymphoma](#), as well as noncancerous conditions such as

Gaucher's disease, Paget's disease, [osteoporosis](#), [cirrhosis](#) of the [liver](#), [pulmonary](#) embolism, and hyperparathyroidism.

[CA 125](#)

CA 125 is produced by a variety of cells, but particularly by ovarian cancer cells. Studies have shown that many women with ovarian cancer have elevated CA 125 levels. CA 125 is used primarily in the management of treatment for ovarian cancer. In women with ovarian cancer being treated with [chemotherapy](#), a falling CA 125 level generally indicates that the cancer is responding to treatment. Increasing CA 125 levels during or after treatment, on the other hand, may suggest that the cancer is not responding to therapy or that some cancer cells remain in the body. Doctors may also use CA 125 levels to monitor patients for recurrence of ovarian cancer.

Not all women with elevated CA 125 levels have ovarian cancer. CA 125 levels may also be elevated by cancers of the [uterus](#), [cervix](#), [pancreas](#), liver, [colon](#), breast, lung, and [digestive tract](#). Noncancerous conditions that can cause elevated CA 125 levels include [endometriosis](#), pelvic inflammatory disease, peritonitis, pancreatitis, liver disease, and any condition that inflames the [pleura](#) (the tissue that surrounds the lungs and lines the chest cavity). [Menstruation](#) and pregnancy can also cause an increase in CA 125.

Carcinoembryonic Antigen

Carcinoembryonic antigen ([CEA](#)) is normally found in small amounts in the blood of most healthy people, but may become elevated in people who have cancer or some benign conditions. The primary use of CEA is in monitoring colorectal cancer, especially when the disease has spread (metastasized). CEA is also used after treatment to check for recurrence of colorectal cancer. However, a wide variety of other cancers can produce elevated levels of this tumor marker, including [melanoma](#); [lymphoma](#); and cancers of the breast, lung, pancreas, [stomach](#), cervix, [bladder](#), kidney, [thyroid](#), liver, and ovary. Elevated CEA levels can also occur in patients with noncancerous conditions, including [inflammatory bowel disease](#), pancreatitis, and liver disease. Tobacco use can also contribute to higher-than-normal levels of CEA.

[Alpha-Fetoprotein](#)

Alpha-fetoprotein ([AFP](#)) is normally produced by a developing [fetus](#). AFP levels begin to decrease soon after birth and are usually undetectable in the blood of healthy adults (except during pregnancy). An elevated level of AFP strongly suggests the presence of either primary liver cancer or germ cell cancer (cancer that begins in the cells that give rise to eggs or sperm) of the ovary or testicle. Only rarely do patients with other types of cancer (such as stomach cancer) have elevated levels of AFP. Noncancerous conditions that can cause elevated AFP levels include benign liver conditions, such as

cirrhosis or [hepatitis](#); ataxia telangiectasia; Wiscott-Aldrich syndrome; and pregnancy.

Human Chorionic Gonadotropin

Human chorionic gonadotropin (HCG) is normally produced by the [placenta](#) during pregnancy. In fact, HCG is sometimes used as a pregnancy test because it increases early within the first trimester. It is also used to screen for [choriocarcinoma](#) (a rare cancer of the uterus) in women who are at high risk for the disease, and to monitor the treatment of trophoblastic disease (a rare cancer that develops from an abnormally fertilized egg). Elevated HCG levels may also indicate the presence of cancers of the testis, ovary, liver, stomach, pancreas, and lung. Pregnancy and marijuana use can also cause elevated HCG levels.

CA 19–9

Initially found in colorectal cancer patients, CA 19–9 has also been identified in patients with pancreatic, stomach, and [bile duct](#) cancer. Researchers have discovered that, in those who have pancreatic cancer, higher levels of CA 19–9 tend to be associated with more advanced disease. Noncancerous conditions that may elevate CA 19–9 levels include gallstones, pancreatitis, cirrhosis of the liver, and cholecystitis.

CA 15–3

CA 15–3 levels are most useful in following the course of treatment in women diagnosed with breast cancer, especially advanced breast cancer. CA 15–3 levels are rarely elevated in women with early stage breast cancer. Cancers of the ovary, lung, and prostate may also raise CA 15–3 levels. Elevated levels of CA 15–3 may be associated with noncancerous conditions, such as benign breast or ovarian disease, endometriosis, pelvic inflammatory disease, and hepatitis. Pregnancy and lactation can also cause CA 15–3 levels to rise.

CA 27–29

Similar to the CA 15–3 antigen, CA 27–29 is found in the blood of most breast cancer patients. CA 27–29 levels may be used in conjunction with other procedures (such as [mammograms](#) and measurements of other tumor marker levels) to check for recurrence in women previously treated for stage II and [stage III breast cancer](#).

CA 27–29 levels can also be elevated by cancers of the colon, stomach, kidney, lung, ovary, pancreas, uterus, and liver. First trimester pregnancy, endometriosis, ovarian [cysts](#), benign breast disease, kidney disease, and liver disease are noncancerous conditions that can also elevate CA 27–29 levels.

Lactate Dehydrogenase

Lactate dehydrogenase is a [protein](#) found throughout the body. Nearly every type of cancer, as well as many other diseases, can cause LDH levels to be elevated. Therefore, this marker cannot be used to diagnose a particular type of cancer.

LDH levels can be used to monitor treatment of some cancers, including testicular cancer, [Ewing's sarcoma](#), non-Hodgkin's lymphoma, and some types of leukemia. Elevated LDH levels can be caused by a number of noncancerous conditions, including heart failure, hypothyroidism, [anemia](#), and lung or liver disease.

Neuron-Specific Enolase

Neuron-specific enolase (NSE) has been detected in patients with [neuroblastoma](#); small cell lung cancer; [Wilms' tumor](#); melanoma; and cancers of the thyroid, kidney, testicle, and pancreas. However, studies of NSE as a tumor marker have concentrated primarily on patients with neuroblastoma and [small cell lung cancer](#). Measurement of NSE level in patients with these two diseases can provide information about the extent of the disease and the patient's [prognosis](#), as well as about the patient's response to treatment.

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Sources of National Cancer Institute Information

Cancer Information Service

Toll-free: 1-800-4-CANCER (1-800-422-6237)

TTY (for deaf and hard of hearing callers): 1-800-332-8615

NCI Online

Internet

Use <http://cancer.gov/> to reach NCI's Web site.

LiveHelp

Cancer Information Specialists offer online assistance through the *LiveHelp* link on the NCI's Web site.