

Let's be very clear about something – food is “medicine” for the body. It provides the vital chemicals needed to sustain all life at all levels of development, repair, and growth.

Chemistry is medicine — chemistry is nutrition and food. Chemistry is the fundamental building blocks in which food, medicine, and the human body is built. Atoms create molecules, molecules create cells, cells create tissue, tissue create organs, and organs create organ systems (the human body).

What is clinical chemistry?

Clinical Chemistry is the chemistry of human health and disease. It is also known as clinical biochemistry or chemical pathology, which is the study of chemical and biochemical mechanisms of the body in relation to disease, mostly through the analysis of body fluids such as blood or urine.

Clinical chemists use a wide range of analytical techniques for example, molecular diagnostics, measurement of enzyme

activities, spectrophotometry, electrophoresis, the separation of molecules based on physical characteristics and immunoassays. The work involves manual techniques for which the biomedical scientist develops complex

practical and interpretive skills, through the operation and management of highly automated testing systems capable of producing thousands of results an hour. All assays are closely monitored and quality controlled.

Tests that require examination and measurement of the cells of blood, as well as blood clotting studies, are not included as these are usually grouped under hematology.

Modern Medicine

Medicine is a chemical compound or chemical preparation used for the treatment or prevention of disease, especially a drug or drugs taken by mouth. Most medicines today are made in laboratories and many are based on substances found in nature.

Sometimes a part of the body can't make enough of a certain substance, and this can make a person sick. When someone has type 1 diabetes, the pancreas (a body organ that is part of the digestive system) can't make enough of an important chemical called insulin, which the body needs to stay healthy.

If your body makes too much of a certain chemical, that can make you sick, too. Medicines can replace what's missing (like insulin) or they can block production of a chemical when the body is making too much of it.

Approximately 300,000 Americans die each year from the proper use of over-the-counter and prescriptions drugs. This exceeds deaths due to crack, handguns, and traffic accidents combined. Add to that figure the number of adult and child deaths attributable to over the counter and prescription drugs given outside of hospitals, and the figures are even worse. By contrast, most years nobody dies from the use of herbs, vitamins, natural medicines, or food.

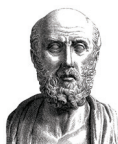
CHEMISTRY

The Foundation for all Medicine and Nutrition

by Dr. Steven T. Castille

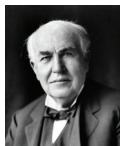
Chemical reactions guide almost all biological processes and dysfunctions in the human body. Enzymes and other catalysts trigger the body's essential processes and ions govern communication between cells. Organic molecules can cause many medical disorders, such as hemophilia, which stems from the lack of a specific organic compound in the blood. In many diseases there are significant changes in the chemical composition of body fluids such as the raised blood enzymes due to their release from heart muscles after a heart attack; or a raised blood sugar in diabetes mellitus due to lack of insulin. Tests are designed to detect these changes qualitatively or quantitatively compared to results from healthy people.

“Let food be thy medicine and medicine be thy food.”



~ Hippocrates. Hippocrates of Kos was a Greek physician of the Age of Pericles, and is considered one of the most outstanding figures in the history of medicine.

“The doctor of the future will give no medicine, but will interest her or his patients in the care of the human frame, in a proper diet, and in the cause and prevention of disease.”



~Thomas Edison. Thomas Alva Edison was an American inventor and businessman. He developed many devices that greatly influenced life around the world.

The Economic Benefit of Drug Therapy

Patent laws drive medicinal development. The replacement of herbs with synthetic drugs is a relatively new phenomenon, less than a century old, born largely out of economic opportunities afforded by patent laws. Drug companies can't typically patent commonly used plants, but they can develop patented, proprietary synthetic drugs, often reaping billions in sales. Since the 1940's, chemists employed by pharmaceutical companies have developed novel synthetic molecules which have replaced plant medicines, and are sold both over the counter and by prescription



Popular Drugs that Steal Nutrients

Depletion of nutrients is among the most common -- and overlooked -- side effects of both over-the-counter (OTC) and prescription drugs. Here's what happens: Medications can cause improper absorption of vitamins and minerals -- or they can accelerate the elimination of nutrients from the body. The consequences may range from bothersome symptoms, such as fatigue or stomach upset, to serious heart, muscle or nerve damage.

Most doctors are aware of some minerals that are depleted through the use of diuretics (water-excreting drugs). However, few doctors are aware of the dangers of nutrient depletion caused by many other types of medication, because the problem is not widely reported. Here are some popular drugs that deplete the body of nutrients.

ANTIBIOTICS

The most commonly prescribed antibiotics include azithromycin (Zithromax), amoxicillin (Amoxil), ampicillin (Omnipen), ciprofloxacin (Cipro), ofloxacin (Floxin) and erythromycin (Eryc).

Nutrients depleted:

- B vitamins. The B vitamins are essential for normal metabolism as well as immune and nervous system functioning.
- Vitamin K. This vitamin is critical for blood clotting and bone strength.
- "Friendly" intestinal bacteria known as *Bifidobacterium bifidum* and *Lactobacillus acidophilus*. Antibiotics kill not only harmful bacteria but also "good" bacteria that promote gastrointestinal health and help balance immune response.

If you are prescribed an antibiotic: Ask your doctor about

also taking a B-complex vitamin -- 50 mg, A vitamin K supplement - 60 micrograms (mcg) to 80 mcg, and probiotic supplements providing 15 billion live *B. bifidum* and 15 billion live *L. acidophilus* organisms daily. **Special Note:** If you're taking any medications, consult your doctor before changing your diet or beginning a supplement. In rare cases, increasing a nutrient may interfere with a drug's potency or worsen your condition.

In addition, eat more vitamin B-rich foods, such as beef liver, chicken, pork, fortified breads and cereals, whole-grain pastas, legumes, nuts, and dark leafy greens. To increase your intake of vitamin K, eat kale, collard, turnip, mustard greens, spinach, and broccoli.

Caution: Do not take vitamin K supplements or eat excessive amounts of vitamin K-rich foods if you take warfarin (Coumadin) or another blood-thinning drug.

For additional *B. bifidum*, eat more asparagus, garlic and/or onions, which stimulate growth of this friendly bacteria. *L. acidophilus*, yogurt containing live cultures is your best food source.

HIGH-CHOLESTEROL DRUGS

The most widely prescribed cholesterol-lowering "statins" include atorvastatin (Lipitor), simvastatin (Zocor), fluvastatin (Lescol), lovastatin (Mevacor) and pravastatin (Pravachol).

Nutrient depleted:

- Coenzyme Q10 (CoQ10). All cells require CoQ10 for the proper function of mitochondria (tiny energy-producing structures within the cells). The more energy a cell must produce, the more it depends on CoQ10. That's why cells of the heart, in particular -- because it is constantly beating -- require an abundance of CoQ10. Unfortunately, statin drugs, which effectively block the production of harmful cholesterol, also prevent CoQ10 production.

Some doctors worry that long-term use of statins may worsen heart failure. Studies have found that patients with chronic heart failure have lower CoQ10 levels, and that CoQ10 supplements may improve their heart condition. Signs of CoQ10 deficiency include fatigue and muscle weakness.

If you are prescribed a statin: Ask your doctor about taking 30 mg to 100 mg of a CoQ10 supplement daily. This nutrient also is available in some foods, including beef, chicken, salmon, oranges and broccoli.

PAINKILLERS

Millions of Americans take a nonsteroidal anti-inflammatory drug (NSAID), such as ibuprofen (Motrin, Advil), naproxen (Aleve), celecoxib (Celebrex) and nabumetone (Relafen), to help relieve arthritis and other inflammatory pain.

Nutrient depleted:

- Folic acid. Your body needs this water-soluble B vitamin to produce new cells and DNA and to synthesize and utilize proteins. Several large epidemiological studies have linked low folic acid levels to increased risk for colon, breast and pancreatic cancers.

Heart health is also affected by folic acid. As folic acid levels decline, levels of the amino acid homocysteine rise.

Studies suggest that elevated homocysteine can raise the risks for blood clots, heart attack and stroke. Low folic acid

levels may cause loss of appetite, irritability, weakness, shortness of breath, diarrhea, anemia, headaches, heart palpitations and a sore tongue. If you take an NSAID regularly (daily for at least one to two weeks): Talk to your physician about also taking 400 mcg to 800 mcg of folic acid daily. You also can get more folic acid by consuming fortified breakfast cereals, orange juice, spinach and other leafy greens, peas and beans.

BETA-BLOCKERS

Beta-blockers, such as propranolol (Inderal), atenolol (Tenormin), betaxolol (Betoptic S), carteolol (Cartrol) and labetalol (Normodyne), are commonly prescribed for high blood pressure or glaucoma.

Nutrients depleted:

- CoQ10. Not only does CoQ10 appear to improve cardiac function in patients with chronic heart failure, studies suggest that it also may prevent second heart attacks and possibly protect against Parkinson's disease.
- Melatonin. The hormone melatonin is essential for healthy sleep-wake cycles, and there's some early evidence that it may slow aging.

If you take a beta-blocker: Ask your physician about taking 30 mg to 100 mg of CoQ10 daily, and 1 mg to 3 mg of melatonin nightly, just before bed, if you have trouble sleeping.

ACE INHIBITORS

Angiotensin-converting enzyme (ACE) inhibitors, such as enalapril (Vasotec), benazepril (Lotensin) and ramipril (Altace), as well as angiotensin II receptor blockers (ARBs), including candesartan (Atacand) and irbesartan (Avapro), are prescribed for high blood pressure and heart failure, and to help prevent heart attacks in high-risk patients.

Nutrient depleted:

- Zinc. Zinc boosts immunity, and some studies have shown that it reduces the duration of cold symptoms. Zinc also is necessary for wound healing, strong bones and male potency, and it may help slow

the progression of age-related macular degeneration (AMD).

In a recent six-year National Eye Institute study involving 3,600 people with AMD, zinc and antioxidant supplements reduced the risk of developing advanced AMD by 25%.

If you take an ACE inhibitor or ARB: Ask your doctor about taking 50 mg to 100 mg of zinc daily and eating more zinc-rich foods, such as oysters, beef, dark-meat chicken, pork tenderloin, yogurt, milk, peas, beans and nuts. If you continue to take zinc indefinitely, do not exceed 50 mg daily.

Important: Many medications combine an ACE inhibitor or ARB with a diuretic -- for example, enalapril and hydrochlorothiazide (Vaseretic) is an ACE inhibitor plus a diuretic, candesartan and hydrochlorothiazide (Atacand HCT) is an ARB plus a diuretic.

If you're taking a combination drug, you'll need to compensate not only for zinc, but also for the electrolytes and nutrients excreted by the diuretic, including potassium, magnesium, thiamine (B-1) and calcium. Ask your doctor for advice.

DIABETES DRUGS

People with type 2 diabetes are often prescribed tolazamide (Tolinase), acetohexamide (Dymelor), glimepiride (Amaryl) or glipizide (Glucotrol) -- all sulfonylurea drugs. These medications stimulate the pancreas to produce more insulin, which lowers blood sugar.

Nutrient depleted:

- CoQ10. Diabetes more than doubles your chances of dying from heart disease or stroke -- and low CoQ10 levels exacerbate those risks.

If you're taking a sulfonylurea drug: Ask your doctor about supplementing with 30 mg to 100 mg of CoQ10 daily.

REFLUX DRUGS

Proton pump inhibitors, such as esomeprazole (Nexium), lansoprazole (Prevacid), omeprazole (Prilosec) and rabeprazole (AcipHex), are prescribed for chronic heartburn -- also known as gastroesophageal reflux disease (GERD) -- and ulcers.

Nutrient depleted:

- Vitamin B-12. Vitamin B-12 is essential for producing red blood cells and maintaining a healthy nervous system. Deficits may cause fatigue, dizziness, shortness of breath, diarrhea, tingling in the hands or feet, unsteady gait, nervousness, cognitive changes and even dementia. Vitamin B-12 is found in red meat, fish, eggs and dairy foods, but our bodies require stomach acid to release the vitamin from these foods. Proton pump inhibitors reduce the production of stomach acid, inhibiting the release and absorption of vitamin B-12.
- Iron. Low iron reduces the amount of oxygen your red blood cells can transport to body tissues, leaving you feeling weak and fatigued. A serious iron deficiency results in anemia. If you take a proton pump inhibitor: Ask your doctor about taking 500 mcg to 1,000 mcg of vitamin B-12 daily and for advice on the best way to increase your iron intake. Caution: Never take an iron supplement without consulting your physician -- excess iron can accumulate in your major organs and cause severe damage. Most people, however, can safely eat more iron-rich foods, including liver, beef, dark-meat chicken or turkey, legumes and fortified cereals.

The Most Prescribed Medications

Chemistry is the foundation for all drug medications (chemical compounds that create a chemical reaction in the body to facilitate a desired reaction). These are the best-selling prescription drugs in America, according to the research firm, IMS Health. They form the shadow of our nation's ailments. Among pharmaceutical industry watchers, the big news is that the top 10 drugs are generics, i.e. the ones Big Pharma makes little money on. For the casual observer, what stands out is that five drugs treat high blood pressure and by far the best-selling drug in this country is Vicodin. People are stressed out and hurting, apparently.



Drug	Prescriptions (millions)	Condition
Vicodin	131.2	Pain
Zocor	94.1	High cholesterol
Lisinopril	87.4	High blood pressure
Synthroid	70.5	Hypothyroid
Norvasc	57.2	High blood pressure
Prilosec	53.4	Acid reflux
Zithromax	52.6	Bacterial infection
Amoxicillin	52.3	Bacterial infection
Metformin	48.3	Diabetes
Hydrochlorothiazide	47.8	High blood pressure
Xanax	46.3	Anxiety
Lipitor	45.3	High cholesterol
Furosemide	43.4	High blood pressure
Metoprolol tartrate	38.9	High blood pressure
Ambien	38.0	Insomnia

The top 15 highest-grossing drugs treat a similar but not identical set of conditions, according to IMS. Three drugs treat heart disease and cholesterol. Three more treat depression and bipolar disorder. Arthritis and asthma each have two drugs in the top 15. Acid reflux, diabetes, anemia, cancer and pain round out the list. All of the medicines with the exception of Oxycontin are for chronic conditions.

Comparing the two lists, the most striking contrast is the revenue potential of mental health drugs, which don't get prescribed that often, but rank way up on the sales list. Lipitor is the only medication that makes both lists.

Drug	Sales (billions)	Condition	Scientific name
Lipitor	\$7.2	Heart disease/cholesterol	Atorvastatin
Nexium	\$6.3	Acid reflux	Esomeprazole
Plavix	\$6.1	Heart disease/cholesterol	Clopidogrel
Advair Diskus	\$4.7	Asthma	Fluticasone and salmeterol
Abilify	\$4.6	Mental health	Aripiprazole
Seroquel	\$4.4	Mental health	Quetiapine
Singular	\$4.1	Asthma	Montelukast
Crestor	\$3.8	Heart disease/cholesterol	Rosuvastatin
Actos	\$3.5	Type 2 Diabetes	Pioglitazone
Epogen	\$3.3	Anemia	Epoetin Alfa
Remicade	\$3.3	Arthritis	Infliximab
Enbrel	\$3.3	Arthritis	Etanercept
Cymbalta	\$3.2	Mental health	Duloxetine
Avastin	\$3.1	Cancer	Bevacizumab
Oxycontin	\$3.1	Pain	Oxycodone

Source: theatlantic.com

Naturopathy (natural medicine)



Naturopathic Medicine is a distinct health care system that combines modern scientific knowledge and traditional more natural forms of medicine that encourage an individuals' inherent self-healing process.

The fundamental goal of natural medicine is to bring the body back into balance using a whole body concept of mind, body, and spirit. The balance that we ultimately are describing is a balance of the body's chemistry where the body is free of disease, pain, or discomfort.

Nutrition

Nutrition is the most fundamental form of natural medicine and it is the study of how macronutrients and micronutrients (chemistry) affect the chemical processes of an individual and how attention to cellular nutrition can benefit overall health. A nutritionist pinpoints areas of nutritional deficiency and recommends a course of action to restore balance.

Both Naturopathy and Nutritional Medicine focus on ensuring the health of clients by focussing on the root cause of illness and building the health and well-being of a client rather than treating ailments. This is specifically done by identifying the chemical — nutrient deficiencies that cause the disease or imbalance. Here is a list of vitamins and minerals required to maintain good health.

VITAMINS

Vitamin A 900 micrograms (RDA)
Food Sources: Sweet potato, carrots, cantaloupe, spinach

Vitamin D 5 micrograms (AI)
Food Sources: Sunlight, fortified milk, eggs

Vitamin E 25 milligrams (RDA)
Food Sources: Plant oils, seeds, nuts, wheat germ

Vitamin K 120 micrograms (AI)
Food Sources: Leafy green vegetables, cabbage, vegetable oil

Thiamin (B1) 1.2 milligrams (RDI)
Food Sources: Whole and enriched grains, legumes, nuts

Riboflavin (B2) 1.3 milligrams (RDI)
Food Sources: Dairy, green leafy vegetables, cereals

Niacin (B3) 16 milligrams (RDI)
Food Sources: Milk, eggs, fish, cereals, nuts, enriched cereal

Vitamin B6 1.3 milligrams (RDI)
Food Sources: Fish, poultry, fruit, potato, whole grains, soy, fruit

Vitamin B12 2.4 micrograms (RDI)
Food Sources: All animal products

Folate 400 micrograms (RDA)
Food Sources: Green leafy vegetables, legumes, seeds, and grain

Pantothenic acid 5 milligrams (AI)
Food Sources: Found in most food

Biotin 30 micrograms (RDA)
Food Sources: Found in most food

Vitamin C 90 milligrams (RDA)
Food Sources: Citrus, cabbage, green vegetables, cantaloupe

MINERALS

Calcium 100 milligrams (RDA)
Food Sources: Milk, tofu, greens, legumes

Phosphorus 700 milligrams (RDA)
Food Sources: All animal tissue

Magnesium 420 milligrams (RDA)
Food Sources: Nuts, legumes, grains, leafy green vegetables

Iron 8 milligrams (RDA)
Food Sources: Poultry, shellfish, eggs, legumes, dried fruits

Zinc 11 milligrams (RDA)
Food Sources: Protein containing foods

Iodine 150 micrograms (RDA)
Food Sources: Iodized salt, seafood, bread

Selenium	55 micrograms (RDA)
<i>Food Sources: Seafood, whole grains, and vegetables</i>	
Fluoride	4 milligrams (AI)
<i>Food Sources: Fluorinated water</i>	
Sodium	500 mg – 2400 mg (RDA)
<i>Food Sources: Salt</i>	
Copper	900 micrograms (RDA)
<i>Food Sources: Seafood, nuts, seeds, whole grains</i>	
Chromium	35 micrograms (AI)
<i>Food Sources: Meat, unrefined grains, vegetable oil</i>	
Molybdenum	45 micrograms (RDI)
<i>Food Sources: Legumes, cereals, organ meats</i>	
Manganese	2.3 milligrams (RDA)
<i>Food Sources: Nuts, whole grains, leafy green vegetables</i>	
Potassium	2000 milligrams
<i>Food Sources: All whole foods: milk, fruits, vegetables, grains</i>	

Dietary Reference Intakes: Recommended Dietary Allowance (RDA), Recommended Daily Intake (RDI), and Adequate Intake (AI).

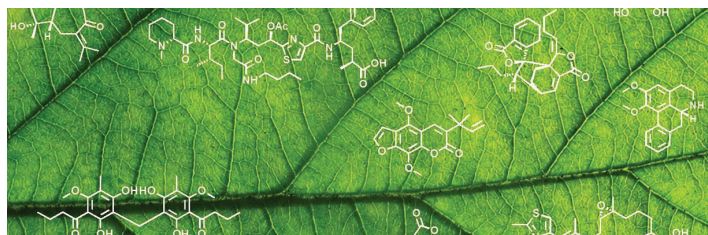
To maintain normal body chemistry your body requires that you get the following vitamins and minerals “consistently” every day.

“One day it will be possible that all disease can be prevented or reversed at the molecular level.”

~ Dr. Steven T. Castille

Pharmaceutical Drugs from Plants

How often have you heard a medical professional say “I don’t believe in natural medicine.”? This demonstrates a basic lack of understanding of chemistry and traditional and natural medicine. Approximately 30 - 40% of the prescription drugs in use today are derived from naturally occurring plants (natural medicine). The active ingredients are what is used to formulate the pharmaceutical drug that can be patented for economic benefit by large pharmaceutical companies.



Around 70 percent of all new drugs introduced in the United States in the past 25 years have been derived from natural products, reports a study published in the March 23 issue of the Journal of Natural Products. The findings show that despite increasingly sophisticated techniques to design medications in the lab, Mother Nature is still the best drug designer.

Here is just a brief list of the more popular pharmaceutical drugs derived from plants (i.e. natural medicine):

Cortisons	Use: reducing inflammation and birth control
<i>Plant Source: Mexican Yams</i>	
Salicylic Acid	Use: fever reducing and pain
<i>Plant Source: Queen of prairie</i>	
Morphine	Use: potent pain killer
<i>Plant Source: Opium poppy</i>	
Senna	Use: laxative and a cathartic
<i>Plant Source: Indian senna plant</i>	
Penicillin	Use: antibiotic and antibacterial
<i>Plant Source: Penicillium (fungus)</i>	
Tetracycline	Use: antibiotic
<i>Plant Source: Bacterium</i>	
Quinine	Use: Anti-malarial
<i>Plant Source: Cinchona</i>	
Acetyldigoxin	Use: cardiotoxic
<i>Plant Source: Digitalis lanta (foxglove)</i>	
L-Dopa	Use: anti-parkinson
<i>Plant Source: Mucuna pruriens (velvet bean)</i>	
Ephedrine	Use: antihistamine
<i>Plant Source: Ephedra sinica (mormon tea)</i>	
Kawain	Use: tranquilizer
<i>Plant Source: Piper methysticum (kava)</i>	
Lapachol	Use: anticancer, antitumor
<i>Plant Source: Tabebuia avellanedae (lapacho tree)</i>	
Vasicine	Use: cerebral stimulant
<i>Plant Source: Vinca minor (periwinkle)</i>	

“Taxol came from the bark of the Pacific Yew tree. The USDA in a random collection in 1962 did the first collections in Washington State,” In 2004 researchers at the USDA released the statement. “After decades, this produced one of the best anticancer drugs available.”

Rosy periwinkle in Madagascar. Two drugs derived from rosy periwinkle are used for treating Hodgkin’s lymphoma and childhood leukemia Photo by Julie Larsen Maher.



Chemistry Provides the Link for Patient Care

Typical role of clinical chemist — a clinical chemistry department within a hospital provides the vital link between front line clinical staff and the basic sciences employing analytical and interpretative skills to aid the clinician in the prevention, diagnosis and treatment of disease.

Diseases such as heart attacks, kidney failure, viral and bacterial infection, infertility, diabetics, high cholesterol, thyroid problems or measuring drug levels to make sure people are on the best dose are some of the many areas where the Clinical Chemist and the Clinical Chemistry Laboratory become involved in a patient’s therapeutic care. Some regional laboratories are involved in screening services such as phenylketonuria and cystic fibrosis in newborn babies, genetic screening and screening for illegal drug use.

CANCER

Many people think the amount of cancer we are experiencing is normal. It is not normal. Although cancer has been around as long as we have, it was once a rare disease. Today it is an epidemic.

1801-1899: Cancer affected 1 out of 1,000 people.
Early 1900s: Cancer affected 30 out of 1,000 people.
2015 (present): Cancer affects 1 out of 2 people in their lifetime.

Since 1940, cancer has increased rapidly in all the industrialized nations, and the trend has accelerated even more since 1975. From 1950 to 2001, national cancer statistics show that the incidence for all types of cancer increased by 85 percent in the United States. Cancer has been rising so dramatically that right now more Americans die of cancer each year than all the servicemen and women who lost their lives in World War II, Korea, and Vietnam put together. Cancer is America's most expensive disease, and the treatments are worse than the disease. Close to half of all Americans will develop diagnosable cancer in their lifetime, and conventional medicine has been unable to stem this epidemic.

The cure to cancer is Chemistry. Maintaining normal body/cell chemistry will prevent cancer and will cure cancer. The goal of cancer drugs, radiation treatments, and chemotherapy is to restore the body to normal chemistry.

According to George C. Pack, M.D., a cancer specialist at Cornell Medical School, "The only real defense against cancer is the immune system. Everyone produces cancer every day, but if the immune system is where it should be, cancer cells are eliminated and we never know it." Furthermore, "Once a person has developed cancer, even though treatments get it into remission, it will recur again unless the body conditions that allowed it to develop in the first place are corrected."



Surgery, chemotherapy and radiation will all reduce your tumor burden, but they will not change the underlying conditions that allowed the cancer to happen. The tumor may disappear, but the cancer won't. Cancer

is not the tumor, it is the process, and while the process is still operating – you still have cancer. To get cancer, you must change your internal environment (cell chemistry) to one that supports the cancer process.

To cure cancer you must restore normal body and cell chemistry. When you do so, the cancer process shuts down and tumors simply disappear. Since there are only two primary causes of disease – deficiency and toxicity – getting well is about eliminating deficiency and toxicity through nutrition and detoxification. The best strategy of all is to prevent cancer. Normal body chemistry will not support the cancer process; cancer cannot happen in a healthy body. To prevent cancer and make yourself cancer proof, keep your body chemistry normal.

In 1998 Dr. Harold Foster published in the International Journal of Biosocial Research a study of 200 cases of

spontaneous remission cancer patients. What he found was that every one of these "mysterious" remissions had a good explanation. Almost 90% of these people had made major changes in diet. The remainder had undergone detoxification programs or went on supplement programs. The fact is all 200 had done something substantial to alter their cell chemistry, turning off the switches and shutting down the drivers that were promoting their cancer.

70% of All Americans do not consume the recommended daily allowance.

Source: USDA 1996 Continuing Survey of Food Intakes for Individuals

Changes in cell chemistry due to a lack of micro and macro nutrients will weaken the cells that provide the immune response and cause cell damage in others that will turn into cancer cells.

German chemist Otto Warburg first published in 1910 the process of cancer and he won his first Nobel Prize in Physiology/Medicine in 1931 for proving that oxygen deficiency will cause cancer. Warburg determined that cancer cells were fundamentally different from normal cells. Normal cells combine fuel with oxygen to produce energy. Cancer cells produce energy by fermenting sugar in the absence of oxygen, and a 35 percent reduction in cellular oxygen levels is sufficient to trigger the shift toward fermentation. The less oxygen we have, the more energy is produced by fermentation until the cell finally becomes a cancer cell. An acidic pH also deprives cells of oxygen and disables respiratory enzymes that are responsible for utilizing oxygen – a bad combination. Cancer thrives in an acidic, low oxygen, inflamed environment.

Inflammation is not only an on switch for cancer, it is also a driver of the cancer process. Chronic inflammation is a foundation stone of every chronic disease. The continuous production of inflammatory chemicals blocks the natural process of apoptosis. Apoptosis is a process of cell death that is genetically programmed into every cell, preventing uncontrolled growth of tumors. By blocking apoptosis, inflammation protects cancer cells from natural cell death.

To prevent and control inflammation, take high-quality anti-inflammatory supplements, such as vitamins A, C, D, E and carotenes, along with minerals like zinc, selenium, and magnesium, plus other forms of antioxidants like CoQ10, epigallocatechin gallate (EGCG), and curcumin. A diet high in fresh fruit and vegetables and free of animal protein can dramatically reduce inflammation. Toxins should be avoided and stress reduced. Excess weight must be brought under control.

Chemistry is the foundation of medicine and nutrition. Chemistry is the key to curing and preventing cancer.



Dr. Steven T. Castille is a biochemist and his current research is in clinical chemistry. He is a Cum Laude graduate in chemistry from Grambling State University in 1991. He has graduate degrees in Engineering and Natural Medicine. You can connect with Dr. Steve at www.DrSteveCastille.com.