

Nutritional Protection Of The Immune System

A Sensible Approach To Maintaining Good Health

Toxic substances in air, water, and food create a distinct hazard for modern man. Even if we lived in a pristine world with no man-made chemicals, we would not be free of natural toxins present in our environment. The fact that our planet contains pollutants supports the practice of protecting the body's natural immune system with a healthy diet and a sound program of nutritional supplementation.

The Need For Self Protection

Each day, an individual is bombarded with a number of toxic organic substances in the environment. The air is polluted from a variety of sources ranging from industrial by-products to fossil fuels to internal combustion engine exhausts. The air also contains toxic metals such as arsenic and lead. These toxic heavy metals persist in the environment since they are not biodegradable. Once the metals get into the body, they tend to combine with various biological tissues so that they are eliminated very slowly.

Some authorities believe that indoor air pollution may be as detrimental to human health as outdoor air pollution. Monitoring of sulfur dioxide, nitrogen oxides, carbon

monoxides and other toxic airborne pollutants in the home or office has shown high and potentially detrimental levels to be present in many cases.

In vast areas of the United States, the water contains a variety of chlorinated chemicals. In fact, it is surprising how many contaminants find their way into drinking water...even paints and paint products are present in some water supply systems!

Chloroform results from the treatment of water by chlorine. Many chlorinated compounds found in drinking water originate from industrial leaks and spills. Among these are trichloroethylene, trichloroethane, and, in some areas, even cancer-causing PCB's.

Foods many contain residual pesticides. In the past, high levels of mercury were found in many species of fish. Mercury is absorbed by the body, causing interference in the activity of some important enzymes.

It is not feasible to expect the government to protect us against the toxic environment. And, it is not prudent to assume that we are safe from the effects of pollution. The most sensible way to deal with the toxic world is through

self-protection.

The Toxins in Our Environment

Oxygen

Oxygen is essential for life, but oxygen intake can be likened to a two-edged sword. A very tiny percentage of oxygen in the air, and hence that which is inhaled, is in the form of an extremely active molecule called "free radical" oxygen. This form is very damaging to all cells — especially cell membranes — and it can initiate a variety of reactions which propagate other free radicals. The active oxygen can react with water to form peroxides that have been shown to be powerful mutagenic compounds.

Free radical oxygen reacts rapidly with unsaturated fats causing rancidity. The first chemical step in this rancidity reaction is the formation of a chemical structure called "epoxides." Epoxides, too, are mutagenic, and, in many cases, carcinogenic.

Benzo(a)pyrene

All burning substances liberate a series of hydrocarbons which are biologically active. Some of these are known to produce cancer in experimental animals. The one hydrocarbon prevalent in the air we breathe is benzo(a)pyrene. This compound has been found in environmental specimens such as lake water, sediments from lakes, ice, soil, drinking water, sea water, solid wastes, as well as in the exhausts from internal combustion engines. Benzo(a)pyrene is metabolized in the body, mainly by the liver, to produce a carcinogenic product.

Arsenic

Agricultural sprays containing arsenic are seldom used in this country; however, residues are still in the environment from previous uses.

Arsenic-containing chemicals are still used as growth promoters in livestock and poultry. Different forms of arsenic have different degrees of toxicity. Arsenic is readily absorbed, slowly excreted, and is considered a cumulative poison that acts by interfering with enzymes necessary for producing energy in the cells.

Cadmium

Cadmium is one of the most toxic of all elements. It has no known biological function, but acts as an inhibitor of many enzymes. Cadmium is also a suspected carcinogen and it can replace the essential element, zinc.

Cadmium is found throughout the environment, in the air and in many domestic waters. Sewage sludge cannot be used to enrich soils in many locations because of high cadmium content.

Lead

Lead is nonessential for life and is very toxic, especially to young children. It is ubiquitous in our environment because of industrial wastes and automobile exhausts. Old houses have lead paint in them.

High lead levels can cause anemia, can interfere with calcium absorption, and will deposit in the bones in place of calcium.

Mercury

Mercury is found in many areas in the United States. Airborne mercury is washed out by the rain and in certain areas rainwater can contain mercury at a level of 100-300 ppt. Fish, living in mercury-contaminated waters, concentrate mercury in their lives.

Mercury compounds may be involved with stabilizing free radicals, an additional role of this element in toxicity.

Aflatoxins

Probably the most toxic and mutagenic carcinogenic compounds are the mycotoxins which are produced in nature as a by-product of mold growth on many, but not all, foods. Among the more toxic of these is the compound called aflatoxin.

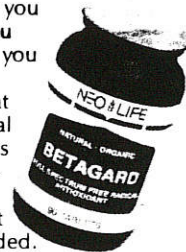
Many peanuts stored under improper conditions of temperature and humidity may contain aflatoxins, and hence some peanut butters. In addition to peanuts, aflatoxins have been found on corn, barley, most nuts, cottonseed, rice, wheats, and other seeds and grains.

WARNING: LIFE ON EARTH CAN BE HAZARDOUS TO YOUR HEALTH



Every day, you are exposed to any number of harmful toxic substances in the air you breathe, the water you drink, and the foods you eat.

You may know that your natural biological immune system works hard to protect you—but these days, you need *more* than what Mother Nature provided.



NEO-LIFE TO THE RESCUE

For nearly three decades, Neo-Life has maintained a commitment to providing superior quality, natural nutritional products that help to protect your health. We take great pride in meeting your needs.

Now, more than ever, we are aware of your need for nutritional protection against harmful pollutants in the environment.

SELF PROTECTION MADE SIMPLE

Neo-Life now offers an exciting new approach to controlling the negative effects of pollution. BETAGARD is an effective, free radical antioxidant in a scientifically-complete formula that helps guard against the accumulation of harmful toxic substances in your system. Research has proven that *beta carotene* (a prime component of BETAGARD) is one of the most efficient protectors against toxins that have been associated with cancer and other diseases that plague modern man.

For more information about BETAGARD and the many other Neo-Life products that work to enhance your natural immune system, contact your local independent Neo-Life Distributor (see telephone directory or write us; convenient toll-free number).

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ON YOUR SIDE
IN THE WAR

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Nitrosamines

Nitrosamines are among the more powerful carcinogens, causing cancer in experimental animals.

Nitrosamines are found naturally in some foods, and may be produced in the intestine by the reaction of nitrites and secondary amines found in proteins.

Mutagens

A number of foods contain mutagens and carcinogens. Some of the food additives and colorings previously used were strong animal carcinogens.

A vast number of foods, especially protein-containing foods, produce powerful mutagens when the foods are overcooked or burned. These mutagens result from the decomposition of amino acids in the food.

Natural Products As Protectors

Vitamin A

It now appears that low vitamin A intake and low serum retinol are related to higher cancer incidence.

Vitamin A is necessary to protect the bladder, the lung surfaces and other mucous tissues from pollutants in the air. It may, thus, protect against lung infections.

Vitamin A works more efficiently when zinc is present.

Beta Carotene

Beta Carotene is one of the most efficient protectors against cell damage by a variety of oxidizing agents. In fact, it can trap and destroy free radical oxygen.

Beta Carotene is a precursor of vitamin A, and seems to be most useful in conjunction with vitamin A and vitamin E.

Zinc

Zinc is among the most important essential elements, and is associated with more enzymes than any other trace element. A deficiency of zinc gives rise to many pathological changes.

Zinc is a potent antagonist to cadmium and can protect against its toxicity. In this action, zinc and selenium work together. Also, the presence of zinc makes vitamin A more available.

Niacin (B3)

This vitamin is necessary for metabolism of all substances we eat. It is especially necessary in the liver to help detoxify any foreign organic material ingested or inhaled.

Pyridoxin (B6)

Vitamin B6 acts as a co-enzyme in all cells metabolizing food. It is also important in the metabolic destruction of toxic organic chemicals.

It acts in conjunction with vitamins B2, B3, and with vitamin C. Its efficiency is increased by magnesium.

Riboflavin (B2)

Riboflavin is an essential vitamin and acts as a co-enzyme in metabolism. It is present in all cells. It is important in helping the liver function and, thus, aids in the detoxification of all foreign substances.

Riboflavin acts in conjunction with vitamin A.

Bioflavonoids

Bioflavonoids are claimed to act synergistically with vitamin C. (These compounds were once called vitamin P, but that designation has been dropped.)

Vitamin C

Vitamin C acts as a detoxifier in more than one way. It is a strong antioxidant and it acts to prevent the formation of nitrosamines in the intestine. It has been found to be a detoxifying agent in its own right.

Vitamin C counteracts some of the toxic effects of cadmium. Among its beneficial properties is that it helps in the absorption of iron.

Vitamin E

Vitamin E is an active antioxidant and protects against the formation of lipid peroxides which may cause cancer and accelerate aging.

Vitamin E and Vitamin C act together better than either one alone to rapidly detoxify some organic compounds and to prevent formation of cancer-forming nitrosamines.

Vitamin E acts more efficiently with selenium, making for a powerful antioxidant action, protecting against lipid peroxidation.

Selenium

Selenium is an antioxidant and works especially well with vitamin E in this capacity, and also vitamin A.

It protects against the toxicity of cadmium and mercury, especially methyl mercury. This is one of nature's chemical defenses against heavy metal poisoning by environmental metals.

In addition, selenium antagonizes the toxicity of lead and protects against the environmental pollutant benzo(a)pyrene by suppressing the metabolism of benzo(a)pyrene to its active and more toxic form.

There is increasing evidence of a strong relationship between selenium intake and lower cancer rates. However, like all inorganic elements, too great an intake will be very toxic.

Magnesium

Magnesium is essential for many enzymes. It is also required for the formation of nucleic acids, DNA, RNA, as well as proteins. Detoxification and tissue repair cannot proceed without magnesium.

Pollution Solutions

The latest scientific research reveals new evidence about the potential of vitamins and nutritional supplements to protect the body from harmful environmental agents, and to reduce our vulnerability to some chronic disease processes, such as certain cancers. The nutrients we ingest can nullify oxidant reactions and inhibit damage from environmental pollutants. It pays to fortify the body's natural built-in defense mechanisms with a healthy diet and a sound program of nutritional supplementation.

This article is based upon the research and writings of Arthur Furst, Ph.D., Sc.D., D.A.T.S. Dr. Furst is the Vice Chairman and Senior Member of the Scientific Advisory Board of the Neo-Life Company of America, a leading manufacturer of natural nutritional supplements.

Dr. Furst is an internationally recognized cancer researcher, and is considered by the World Health Organization to be the leading scientist in the field of toxicology. He is credited with more than 220 publications on cancer research, organic synthesis, psychopharmacology, and toxicology — which are used by every government in the world to help prevent occupational cancer. A member of some 21 scientific societies and editorial boards, Dr. Furst serves as a consultant to the World Health Organization and various industries and government agencies throughout the world. Since 1976, Dr. Furst has been responsible for product research and development, toxicology studies, and nutritional evaluations of Neo-Life products.