WHOLEHEALTHWEB.COM

THE BETTER HEALTH NEWS

ZINC AND XENOBIOTICS

DETOX

An article appearing in *International Clinical and Nutrition Review* (Jan. 1990;10(1):253-258) looked at the role zinc may play in chemical sensitivity. The article notes that zinc is a cofactor in over 90 enzymes and it is possible that a zinc deficiency may adversely affect the body's ability to metabolize xenobiotics. In 200 randomly chosen patients complaining of chemical sensitivities, 54% had low RBC zinc levels.

Central nervous system toxicity may produce mental confusion, dizziness, inability to concentrate and depression. Chronic chemical exposure may lead to these symptoms, which may be misinterpreted as psychological problems. The aforementioned article presents a case history of a 53 year old female with persistent headaches who had worked in a factory where she shaped wax forms. She had a complete evaluation, including a CAT scan without any findings. She also received allergy injections without relief. She was told by a family doctor to see a psychiatrist. Her headaches were provoked by trichloroethylene testing. Blood levels of trichloroethylene were documented after work at 26.1. Two weeks at home brought the level down to 18.3. The headaches were less severe at home than at work. RBC zinc levels were found to be low at 870 mcg/dl. She was placed on 105 mg of zinc gluconate daily in divided doses with vitamins and minerals. Within two months zinc levels were corrected to 1060 mcg/dl and she reported symptomatic improvement in her headaches which totally cleared at home. Also improved were leg aches, insomnia, periorbital edema, shakes and jitters. Her serum tetrachloroethylene had dropped to 1.3 mg/dl. On double-blind challenge with the trichloroethylene she had no reaction to two saline challenges. She then reported a headache with an intradermal dose of trichloroethylene which was not cleared with the normal saline and cleared with a neutralizing dose of trichloroethylene. The author reports this case, of presumed chemical sensitivities do to zinc deficiency, as an example of how the correction of a micronutrient can stimulate xenobiotic metabolism of a toxic substance such as trichloroethylene.

ENZYMES AND PAIN & INFLAMMATION

There is some evidence that taking enzymes can reduce pain and inflammation, and improve healing. This is something that has been studied for a long time, with studies dating back to the 1960s and 1970s. Usually enzymes are taken to aid digestion. When they are taken on an empty stomach, they act to clean up the debris left over from the chemical warfare of inflammation. One study, published in the *Journal of Strength and Conditioning Research* (2007 Aug;21(3):661-7), showed that taking enzymes reduced muscle damage loss of strength after exercise. Another study in *Clinical Experimental Rheumatology* (Jan-Feb 2006;24 (1):25-30) compared enzyme supplementation to NSAID use in patients with osteoarthritis of the hip. The double-blind, placebo controlled study lasted six weeks and involved 90 subjects and found that enzyme to be comparable to the drug in relieving pain, joint stiffness and improving function.

A study appearing in the *Journal of Dental Disease* (1964;19(2):73-77) evaluated the plant enzyme bromelain and its effect on pain and healing after dental surgery. One group of 22 patients took two 20 mg of a bromelain concentrate four times each day for 2-3 days prior to surgery and continued for 3 days after surgery. In the second phase 33 subjects took 2 tablets 4 times a day on the day of surgery with the first dose being administered prior to surgery. The use of the enzymes produced a marked reduction in inflammation and the amount of time the inflammation persisted post operatively. There was also a reduction in pain. Another study, appearing in the Journal of the American Dental Association (June 1966;72:1420-1425), subjects who underwent dental surgery received a proteolytic enzyme from Carica papaya (1 tablet per hour), or a placebo from the time of surgery until the following morning; for the next four days, they were given 1 tablet four times each day. The subjects taking the enzyme experienced less inflammation and pain, and had enhanced wound healing.

Bromelain, or a placebo was given to 160 women following episiotomy in research appearing in the journal Obstetrics and Gynecology (February 1967;29 (2):275-278). The women were given two tablets, 4x/day for three

WholeHealthWeb.com

Whole Health Web is a site designed to teach people about the value of natural health care. Our goal is to inform you and to help you to start a conversation with your doctor about natural health care. Most of our articles are about scientific research. We will also provide opinion pieces provided by natural health practitioners. Visit us often, as we are continually adding new content.

days beginning within four hours after delivery. One person in the treatment group and four in the placebo group had an episiotomy infection. The amount of medication, especially narcotics, was reduced in patients taking the bromelain therapy. The incidence of episiotomy infections was also lower in the group treated with the enzymes. Another study on episiotomy patients appearing in Current Therapeutic Research (May 1962;4(5):229-237), showed another vegetable enzyme (from papaya) to reduce inflammation and swelling after the surgery. In general, treatment with enzymes has little or no side-effects.

A study on mice performed by scientists at Emory University School of Medicine showed damaged peripheral nerves had improved regeneration when the mice were treated with enzymes. Peripheral nerves are the nerves that go from the spine to the muscle and skin. A nerve cell has a nucleus and a long process, called the axon. The nerve signal (which is responsible for feeling and muscle movement) travels along the axon. When the nerve is damaged, the axon is damaged and function is lost.

SOD AND CATALASE

If you read the labels of products from some vitamin companies, you may see two words: Superoxide Dismutase (SOD) and Catalase. You probably do not think much about it. Both constituents help to remove toxins and to help protect cells from oxidative stress. The term “oxidative stress” is used to describe the damage done by free radicals. A free radical is a chemical that readily gives up an electron—it sort of fires the electron like a chemical bullet. Free radicals can damage tissue and produce inflammation; they create oxidation. Oxidative stress has been linked to cancer, aging, atherosclerosis, ischemic injury, inflammation and neurodegenerative diseases (Parkinson's and Alzheimer's).

SOD is an enzyme that alternately catalyzes the dismutation (or partitioning) of the superoxide (O_2-) radical into either ordinary molecular oxygen (O_2) or hydrogen peroxide (H_2O_2). Superoxide is produced as a by-product of oxygen metabolism and, if not regulated, may cause many types of cell damage. Hydrogen peroxide is also damaging, but less so, and is degraded by other enzymes such as catalase. Thus, SOD is an important antioxidant defense in nearly all living cells exposed to oxygen.

If you want SOD in a high dose, it is available from Biotics Research as ***Dismuzyme Plus Granules™*** and ***Dismuzyme Plus Capsules™.*** It is a vegetable culture source of SOD and catalase. You can use it for chronic pain, sunburn, free radical problems, viral or bacterial infections, rheumatoid arthritis, systemic inflammation and immune insufficiency.

An article appearing in *Pharmacology and Therapeutics* (1989;44(2):285-95), had this to say about SOD: "Since the discovery of superoxide dismutase in 1969, the role of this enzyme in modulating cellular toxicity of superoxide has been well established. Experimentally, cellular damage from compounds or exposures which produce superoxide extracellularly can be prevented or modified by pretreating a cell or organ system with SOD."

Catalase is one of the most potent catalysts known. The reactions it catalyses are crucial to life. Catalase catalyses conversion of Hydrogen Peroxide, a powerful and potentially harmful oxidizing agent, to water and molecular oxygen. Catalase also uses Hydrogen Peroxide to oxidize toxins including phenols, formic acid, formaldehyde and alcohols. The same issue of *Phamacology and Therapeutics* (1989;44 (2):297-307) also notes the value of catalase: "Catalase activity is found primarily in peroxisomes although in some species and in some organ systems, cytosolic catalase also may be involved in intracellular oxidant stress protection. Toxicology studies with repeat exposures to xenobiotics producing hydrogen peroxide either directly or indirectly generally indicate that the organisms develop resistance to the toxin (adaptation)."

HOW HEALTHY ARE YOU?

FINDING OUT IS EASY AS 1, 2, 3!

Right Now, You Can Take Advantage Of Our **Free Online Health Assessment Tool.**

JUST FOLLOW 1, 2, 3!

1. Visit our website to take the **FREE online health assessment.**
2. Print the results.
3. Bring your results to your natural health practitioner.

TAKE OUR FREE ONLINE HEALTH ASSESSMENT NOW!

Visit: www.WholeHealthWeb.com

And Take Your Free Health Assessment Now!

WholeHealthWEB
Learning to Feel Better...Naturally!

WholeHealthWeb.com

Visit often, as we are continually adding new content

CAN VIOLENT BEHAVIOR BE LINKED TO CHEMICAL TOXICITY?

Research appearing in the *Journal of Neuropsychiatry* (1992;4:189-94) linked chemical and pesticide exposure to violent behavior. Researchers at the New York University School of Medicine note that environmental exposure to cholinesterase inhibitors can produce aggressive and violent behavior. Serum or red blood cell count cholinesterase levels can be assessed in patients with idiopathic aggression. Four patients, who were exposed to cholinesterase inhibitors, were noted to become uncharacteristically aggressive. Two of these individuals committed murder. Three had come in contact with an organophosphate lawn pesticide while a fourth had used a carbamate based tick powder, after which the individual began displaying abnormally aggressive and violent behavior. None of these patients had psychiatric or neurologic diagnoses prior to exposure to cholinesterase inhibitors. All had jobs. None had ever been arrested or were prone to fighting or impulsive behavior. All the individuals felt very remorseful after their violent acts. Little or no provocation proceeded the acts. All 4 of the patients returned to normal following the termination of exposure to the cholinesterase inhibitor and none committed further violent or aggressive acts.