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Taurine Keeps Immune Systems Strong and Protects Organs

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(NaturalNews) A seldom thought of amino acid called taurine is turning out to have remarkable properties. New research has revealed that taurine deficiency can compromise the immune system, while supplemental taurine can boost white blood cell count even during chemotherapy. Taurine is protective of organs during oxidative stress and injury, and is a powerful protector of the heart.

Scientists in China have found that taurine plays an important role in the functioning of leucocytes, the white cells in blood that are the backbone of the immune system. They investigated the enhancing effect of taurine on leucocytes after the administration of chemotherapy to mice with induced lung cancer. Some of the mice were given a chemotherapy drug alone, and some were given the drug plus supplemental taurine. The researchers studied the results through the use of indexes that included tumor inhibition rate, count of bone marrow nucleate cells, count and classification of white blood cells, spleen, and thymus.

The lymphocyte proliferation and phagocytic activity of peritoneal macrophage and peripheral blood neutrophilic granulocyte and monocyte activity were tested to analyze the effect of taurine on enhancing leucocyte function after the chemotherapy drug was administered. The mice receiving taurine supplementation were given 40 mg/kg, 80 mg/kg, or 160 mg/kg of body weight.

The tumor inhibition rates for all groups taking taurine combined with the chemotherapy drug were higher than those in the group treated with the chemotherapy drug alone. Compared with the drug only group, all three of the taurine supplemented groups showed increases in count of bone marrow, nucleate cells, count and classification of white blood cells, spleen, thymus, lymphocyte proliferation, and in the phagocytic activity of peritoneal macrophage, and peripheral blood neutrophilic granulocyte and monocyte function. (*European Journal of Pharmacology*, May 31)

Chemotherapy targets cells that are growing quickly with the mission of killing cancerous cells. This is why chemotherapy is so devastating to hair, the digestive system, and bone marrow where white blood cells are made. People receiving chemotherapy face a high risk for developing infections, and they are less able to fight off infections once they develop.

Although different types of chemotherapy affect the immune system differently, this research suggests that humans undergoing chemotherapy may be able to enhance the function of their leucocytes with taurine. Although not as detrimental to the immune system as chemotherapy, radiation also has a suppressing effect on the production of leucocytes that may be mitigated by taurine.

Another research team in China has just completed an investigation of the effects of taurine supplementation on the immune system. This group fed baby quail a diet containing 0.01%, or 0.05% taurine for 42 days and concluded that taurine supplementation had a beneficial effect on immune response and performance. (*Poultry Science*, July)

Taurine protects major organs from oxidative stress

Two other new research studies on taurine highlight its ability to act as an important antioxidant. Other researchers in China studied the ability of taurine to deal effectively with induced reactive oxygen species that can be highly injurious to kidney cells. Rats were administered ethylene glycol and ammonium chloride with restrictions on intake of drinking water for 4 weeks. Simultaneous treatment with taurine was given. At the end of the study, indexes of oxidative stress and renal injury were assessed. The data documented that severe oxidative injury of the

kidneys occurred, and hyperplasia of mitochondria developed in kidney epithelial cells. The activities of superoxide dismutase (SOD) and glutathione peroxidase, two of the most powerful antioxidants produced in the body, decreased and the mitochondrial membrane showed oxidative injury.

Taurine treatment alleviated the oxidative injury of the kidneys, improved SOD and glutathione peroxidase activities, and improved mitochondrial membrane injury. Less crystal deposition was found in the kidneys of the rats treated with taurine. (*Urology Research*, June 10)

An investigation of whether taurine could play a protective role against a potent neurotoxin in the rat brain was carried out by researchers in India. They administered arsenic to rats that resulted in increased intracellular accumulation of heavy metal, production of reactive oxygen species, and superoxide radicals. Oral administration of taurine at a dose of 100mg/kg of body weight for 5 days was found to be highly effective in the prevention of arsenic induced oxidative impairment in the brain tissue of the rats. (*Drug Chemistry Toxicology*, 2009)

Taurine halts cardiac arrhythmias

Natural News recently ran an article spotlighting the research of Dr. George Eby showing taurine could effectively prevent cardiac arrhythmias in humans http://www.naturalnews.com/026380_t.... In a special report, Dr. Eby cites the work of E.I. Chazov who demonstrated that taurine could reverse EKG abnormalities such as S-T segment changes, T-wave inversions, and extra heartbeats such as premature atrial contractions and premature ventricular contractions in animals.

Taurine restores youthful energy levels

Dr. Eby refers to taurine deficiency as "the little old man/little old lady syndrome, known and clearly evinced by the mental image invoked." According to him the problem of low taurine levels appears simple to alleviate with supplemental dietary taurine, available at nearly all healthy food stores, pharmacies and grocery stores in the U.S. and elsewhere. He notes that taurine is why some energy drinks give people energy. These drinks contain taurine and restore taurine levels in the body to the levels of youth, when energy levels were at their peak.

Taurine is highly concentrated in animal and fish protein and is often lacking in the diets of vegetarians. Taurine is a non-essential amino acid which can be derived from food or synthesized from the amino acid cysteine when adequate levels of vitamin B6 are present. Writing on taurine, Dr. Eby says it is "essential to fetal and newborn central nervous system development. The infant cannot initially manufacture taurine and must obtain taurine from its mother's milk. Taurine plays a variety of roles in the normal functioning of the brain, heart, gallbladder, eyes, and vascular system. It is the most important and abundant free amino acid in your heart and contributes to your heart muscle's contractility and regulation of its rhythm."

Furthermore, "Taurine acts as a neurotransmitter in your brain where it is the second most abundant amino acid. It also protects and stabilizes the brain cells' fragile membranes. It is an inhibitory calming neurotransmitter. Taurine acts by regulating the sodium and potassium concentration in the cells and the magnesium level between the cells. This has everything to do with the electrical activity of the cells and subsequent communication between cells. By this mechanism, it has anti-anxiety and anti-convulsant activity. Taurine is found in high concentrations in your eyes and is the most abundant amino acid in your retina. Taurine is known to re-invigorate the natural killer cells of your immune system and to stimulate the release of the immune substance, Interleukin-1."

Taurine plays a role in the decreasing cataract development, and in managing chemical sensitivities. It aids in the absorption and metabolism of fats, and the ability to reduce body cholesterol levels. It is useful for anxiety, agitation, hyperactivity, insomnia, depression, high blood pressure, congestive heart failure, alcoholism, gallbladder disease, and macular degenerations/retinitis pigmentosa. It helps potentiate and improve the action of insulin.

Dr. Eby notes that the Life Extension Foundation has reported extensively on taurine, and credits it with hypotensive and diuretic activity that make it useful for people with hypertension. Much of the diuretic action of taurine comes from preserving potassium and magnesium, and by

promoting sodium excretion. Taurine reduces blood pressure by acting as an antagonist to the pressure-increasing effect of angiotensin, a circulating protein that is activated by the hormone renin. When both blood and urine taurine levels decrease, renin is activated and angiotensin is formed, resulting in constricted blood vessels that allow for water and salt retention. Taurine suppresses renin and breaks the renin-angiotensin feedback loop.

According to Life Extension, a Japanese researcher has established an amino acid-stroke association. He studied a strain of rats, genetically susceptible to strokes, and found the rats had a much lower incidence of stroke, dropping from 90% to 20% if their diets were supplemented with the amino acids methionine and lysine as well as taurine. Japanese researchers found that 4 grams of taurine, given for 4 weeks, brought relief to 19 of 24 patients with congestive heart failure.

Taurine acts like the drug digitalis to increase contractility of the heart muscle, forcing its pumping action. It tends to dampen activity in the sympathetic nervous system and the outpouring of epinephrine. As this system is quieted, the heart tends to beat less aggressively and the blood pressure is lowered. Researchers have shown that incidence of ventricular fibrillation and ventricular tachycardia were significantly reduced when taurine was supplemented.

For more information:

http://www.naturalnews.com/026380_t...

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