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MEDICAL UPDATES

Studies from throughout the world that can help you live longer

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1. **Vitamin C and cataracts in the elderly**

Full source: *JOURNAL OF CLINICAL EPIDEMIOLOGY, 1999, Vol 52, Iss 12, pp 1207-1211*

A study conducted between 1976 and 1980 examined the different factors associated with self-reported cataracts among Americans 60 to 74 years old. It was found that when blood vitamin C level was low, the prevalence of cataracts increased and vice versa; each 1 mg/dl increase in vitamin C was independently associated with a 26% decrease in cataracts. Other associations with cataracts included increasing age, female sex, smoking and diabetes. Thus, vitamin C, a water-soluble antioxidant found in high concentrations in the lens of the eye, may be of importance for the prevention of cataracts among the elderly.

2. **Folic acid, vitamin B12, and atherosclerosis**

Full source: *MEDICAL HYPOTHESES, 1999, Vol 53, Iss 5, pp 421-424*

Atherosclerosis has classically been attributed to high blood cholesterol. Recently, it has been found that reduced blood levels of folic acid, vitamin B12 and vitamin B6 are related to the cause of atherosclerosis and coronary heart disease. These deficiencies lead to inadequate production of S-adenosyl-methionine (SAMe), creating a condition of low methylation. It is hypothesized that this causes low methylation of the DNA in cells in the lining of the arteries resulting in mutation and proliferation of smooth-muscle cells. This leads to the formation of lipid deposits in the arteries. It is further hypothesized that such action can be reversed by megadoses of these three vitamins to reduce or remove existing lipid deposits.

Therefore, it is recommended that all people who suffer from atherosclerosis and having deficiencies of any of these three vitamins and/or an elevation of blood homocysteine, receive supplementation to prevent worsening of their condition.

3. **Niacin as a potential AIDS preventive factor**

Full source: *MEDICAL HYPOTHESES, 1999, Vol 53, Iss 5, pp 375-379*

The B-complex vitamin, niacin, has been found consistently depleted in patients with AIDS. Much experimental data exists to support the potential benefit of niacin in HIV infection. It is therefore, hypothesized that HIV infection depletes niacin, and that reintroducing niacin will act as an AIDS preventive factor. Aids produces a massive metabolic disruption in the body caused by the production of approximately one billion virus particles per day. The primary 'AIDS preventive factor' involves inhibiting the virus. However, costly medications are simply out of reach for the majority of the world's HIV-infected people. Niacin had been called the 'pellagra preventive factor' in the early 1900s, and is being proposed as a secondary 'AIDS preventive factor' in HIV-infected persons today.

4. **Simple protection from 2nd heart attack**

Full source: *INTERNATIONAL JOURNAL OF EPIDEMIOLOGY, 1999, Vol 28, Iss 5, pp 846-852*

A study tested whether behaviors such as discarding obvious fat on meat, cessation of smoking, avoidance of passive smoking, habitual use of reduced fat milk, prudent consumption of alcohol and regular but moderate physical exercise are associated with a reduction of cardiovascular risk. A study consisted of 336 men aged 27-64 years who had a first heart attack during the period 1992-1993 in Australia, and who survived at least 28 days. This and the control groups completed the same questionnaire. The results showed that simple measures such as participation in non-vigorous exercise, and avoidance of added salt are associated with significant and important protection from a second heart attack. This demonstrates that after 25 years of falling mortality in Australia, lifestyles can still be significantly improved to reduce heart disease even further.

5. **Curcumin stimulates immune system activity**

Full source :*IMMUNOLOGICAL INVESTIGATIONS, 1999, Vol 28, Iss 5-6, pp 291-303*

Curcumin, an active ingredient present in the Curcuma longa plant, is a potent stimulator of the immune system. Curcumin administration was found to increase the total white blood cell (WBC) count of mice significantly (15,290) on the 12th day. In comparison, the control group of animals showed results similar to only that of normal animal (10,130 on 12th day). Curcumin increased the number of circulating antibodies by 512. Curcumin administration increased the plaque forming cells (PFC) in the spleen on the sixth day to 1,130 after immunization with SRRC. The condition of bone marrow cells in the femur (thighbone) and alpha -esterase positive cells were also enhanced by curcumin administration. A significant increase in macrophage phagocyte activity was also observed in curcumin treated animals as well.

6. **Melatonin reduces lipid peroxidation and inflammation of the pancreas**

Full source: *DIGESTIVE DISEASES AND SCIENCES, 1999, Vol 44, Iss 11, pp 2257-2262*

Free radicals and lipid peroxidation have been implicated in the pathogenesis of an early stage of acute pancreatitis. When acute pancreatitis was artificially induced in rodents, the degree of pancreatic edema (excessive tissue fluid), the level of lipid peroxidation in the pancreas, and serum amylase activity were increased significantly. However, when melatonin was given 30 minutes before pancreatitis was caused, there was a significant reduction in pancreatic edema and levels of lipid peroxidation. Melatonin also reduced stomach edema as well as high levels of lipid peroxidation in the stomach and small intestine. Melatonin's protective effects in pancreatitis presumably relate to its free radical scavenging ability and to other antioxidative processes that are caused by melatonin.

7. **Prevention of type 2 diabetes**

Full source: *DRUGS, 1999, Vol 58, Suppl. 1, pp 71-73*

Metformin lowers moderate (non-diabetic) fasting high blood sugar levels in individuals at risk for type 2 diabetes without causing low blood sugar. It favorably affects cardiovascular risk factors that are often present in these individuals such as: 1) the maintenance of diet-induced weight loss and its associated improvement in fibrinolysis; and 2) the lowering of blood concentrations of fasting insulin, total- and LDL-cholesterol, free fatty acids, and of two markers of tissue damage. These effects, together with the good tolerability profile of the drug, position metformin as a first choice for the prevention of type 2 diabetes.

8. **CoQ10 vs. hypertension**

Full source: *MEDICAL HYPOTHESES, 1999, Vol 53, Iss 4, pp 300-304*

Recent reports indicate that supplemental Coenzyme Q10 (CoQ10) is moderately effective as a treatment for hypertension. CoQ10 seems to have a direct impact on the vascular wall and is associated with a lowering of peripheral resistance. A reason for this may be that CoQ10 is either scavenging or suppressing the synthesis of superoxide (an oxygen free radical, toxic to cells). CoQ10 seems to improve the efficiency of mechanisms that transfer high-energy electrons from the cytoplasm of the cell to the mitochondria (the principal energy source of the cell which contain the enzymes of electron transport), and thus CoQ10 may decrease NADH levels in the cytoplasm. (NADH binds as a coenzyme to proteins in respiratory metabolism). This thereby diminishes the power that drives the creation of superoxide in tissue. If CoQ10 therapy does indeed lower superoxide levels, it can be expected to decrease the risk of cardiovascular blood clots associated with hypertension.

9. **Development of chronic fatigue syndrome**

Full source: *MEDICAL HYPOTHESES, 1999, Vol 53, Iss 4, pp 347-349*

The chronic fatigue syndrome (CFS) is typically associated with infection. In a substantial proportion of those with CFS, abnormalities of both humoral and cellular immunity have been shown. It has been consistently found that immune system cells (lymphocytes) show impaired responses to mitogens (substances from toxic producing bacteria). As the body's natural antioxidant, glutathione (GSH) is essential for allowing the lymphocyte function properly without being hampered by free radical accumulation. Thus, the impaired function of the immunocytes may cause the reduction of GSH in the cells. GSH is also essential to aerobic muscular contraction. Therefore, an undesirable competition for GSH precursors may develop between the immune and muscular systems. The priority of the immune system for the person's survival has drawn more GSH precursors to it. This, unfortunately deprives the skeletal muscle of adequate GSH precursors to sustain a normal aerobic metabolism, and results in fatigue and eventually myalgia (muscular pain).

10. **Estrogen and cardiovascular disease**

Full source: *MEDICAL JOURNAL OF AUSTRALIA, 1999, Vol 171, Iss 9, pp 490-495*

There are many observational studies, but no reported trials, examining clinical endpoints (death or heart attack) in primary prevention of cardiovascular disease with the use of HRT. The only secondary prevention trial published did not demonstrate a reduction in cardiovascular events with HRT. On present evidence, HRT should not be initiated for primary or secondary prevention of cardiovascular disease. Potential risks, such as breast cancer, must be considered against potential benefits.

11. **Value of exercise in Parkinson's disease**

Full source: *MEDICINE AND SCIENCE IN SPORTS AND EXERCISE, 1999, Vol 31, Iss 11, pp 1544-1549*

Motor disability as well as mood and subjective well being can be clearly improved by intensive sports activities in those with early to medium stage Parkinson's (PD) disease. A study with 16 slightly to moderately affected idiopathic Parkinson patients (PD) consisted of intensive standardized exercise training, performed twice weekly over 14 weeks. All scores improved significantly by exercise training. Six weeks after termination of the training program, the majority of the individuals had lost only minor components of their regained motor skills. There was no significant change in cognitive function during the study. As an unexpected side effect, dyskinesias (difficulty in performing voluntary movements) seemed to be better controlled. A sustained ongoing benefit lasting for at least 6 weeks after the active training period can be achieved but the exact duration of this benefit is unknown.

12. **Fish oil and sex hormones may help prevent Alzheimer's**

Full source: *MEDICAL HYPOTHESES, 1999, Vol 53, Iss 5, pp 369-374*

People with Alzheimer's disease (AD) have degenerative plaques in the brain and the plaques have as a characteristic a self-sustaining reaction, in which both interleukin-l (IL-l) and interleukin-6 (IL-6) undergo increased activity. (These are cytokines or proteins derived primarily from phagocytes [immune cells that ingest bacteria], which enhance the proliferation of T helper cells and growth and differentiation of B cells. However, when secreted in larger quantities, they enter the bloodstream and can cause fever, induce synthesis of acute phase proteins, and initiate metabolic wasting). The fact that IL-6 is detectable in early stage diffuse plaques encourages the speculation that the process is crucial to the development of AD. Estrogen, can block IL-6 production by a direct mechanism in cells having estrogen receptors; since such receptors have been reported in brain cells (glia and astrocytes), estrogen has the potential to limit brain IL-l activity. Testosterone likewise can inhibit IL-6 induction in androgen-responsive cells, which may include brain glia and astrocytes. Since fish oil and gamma linolenic acid (GLA) suppress IL-l production by stimulated monocytes, they conceivably could exert this effect in the brain as well. The low prevalence of AD in elderly Japanese should be noted due to a diet high in fish oil. These considerations suggest that healthy cerebrovascular cells, sex hormone activity, and dietary fish oil/GLA may slow or prevent AD onset by affecting mechanisms in the brain.

13. **Aging and continuous vs. intermittent exercise**

Full source: *AGING-CLINICAL AND EXPERIMENTAL RESEARCH, 1999, Vol 11, Iss 4, pp 227-234*

Continuity of training is more important than the amount and intensity of training. The average life span of rodents is increased by life-long physical exercise. It further improves the performance and retards the aging process. Rats were trained on a treadmill for 12 months continuously or intermittently for 3 km/weeks for 8-week periods with 8-week resting periods in between (72 km). The both training regimens prevented the increase in body weight seen in sedentary animals. The results showed that continuous training was most effective in counteracting age-related changes, with respect to spontaneous movements in an open field setting, and for delaying age-related increase in thermal stability of collagen.

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