

The Nutrition Reporter™

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The independent newsletter that reports vitamin, mineral, and food therapies

High-Dose Nutritional Supplements Improve Survival in Cancer Patients

Last month we described the use of supplements in children with leukemia. The following reports provide evidence on how high-dose supplements can benefit adults with cancer.

A study by European doctors has found that a vitamin cocktail containing large amounts of coenzyme Q10 (CoQ10), selenium, vitamin A, and beta-carotene can extend the lives of terminal cancer patients by five months to two years. This new study echoes clinical reports published in the 1990s showing that high-dose CoQ10 can reduce the risk of breast cancer recurrence.

Niels Hertz, MD, of Vipperød, Denmark, and Robert E. Lister, PhD, of London Metropolitan University, England, were involved in the treatment and data analysis of 41 patients over nine years. All of the patients had poor prognoses – end-stage cancers, including those of the breast, esophagus, lung, pancreas, and prostate, which had metastasized to other organs.

The patients were given daily supplements containing 300 mg of CoQ10, 487 mcg of selenium (as selenomethionine), 25,000 IU of vitamin A, and 76 mg (about 126,000 IU) of beta-carotene. The supplements also contained small amounts of vitamins C and E and folic acid, and they were used in conjunction with conventional treatments.

The researchers calculated the expected survival of patients with their respective types of cancer, and then compared their actual survival time. Although some of the patients had a decrease in survival time, three-fourths of the patients lived an average of five months longer than expected. In many cases, patients lived two years longer than expected.

In a separate study, a team of French researchers found that supplements of docosahexaenoic acid (DHA), an omega-3 fat, greatly increased survival among women undergoing chemotherapy for breast cancer and metastases.

Philippe Bounoux, MD, of INSERM, a French

national medical research institute, and his colleagues treated 25 women with chemotherapy. The women were also given 1.8 grams of DHA daily for five months.

Bounoux reported that 44 percent of the women responded positively to the DHA supplements. Overall survival was almost two years – and almost three years among the women who had the highest blood levels of DHA.

Some of the results were even more striking, Bounoux noted, because two-thirds of the women already had metastases to the liver and other tissues, including bone and lungs. Liver cancers are usually rapidly fatal.

“DHA during chemotherapy was devoid of adverse side effects and can improve the outcome of chemotherapy...” Bounoux wrote.

He added that DHA supplements may make tumors more sensitive to chemotherapy.

References: Hertz N, Lister RE. Improved survival in patients with end-stage cancer treated with coenzyme Q10 and other antioxidants: a pilot study. *Journal of International Medical Research*, 2009;37:1961-1971. Bounoux P, Hajjahi N, Ferrasson MN, et al. Improving outcome of chemotherapy of metastatic breast cancer by docosahexaenoic acid: a phase II trial. *British Journal of Cancer*, 2009;101:1978-1985. □

Perspectives

You Don't Need Supplements?

A recent article on supplements in the *New York Times* said what we've all heard a hundred times before: “Doctors and nutritionists say that people who eat a normal diet generally don't need nutritional supplements, even if they exercise vigorously.” The problem is such statements have absolutely no foundation.

First, what exactly is a normal diet? The definition varies among cultural and ethnic groups. Is it normal to eat the typical American (Western) diet, rich in sugars, starches, and unhealthy oils? Is it normal to

More research summaries on next page

eat on the run, out of boxes and microwave ovens?

Second, even if you assume that a normal diet is one consisting of fish, chicken, veggies, and other whole foods, are you really absorbing adequate amounts of the nutrients in foods? Eating healthy foods is certainly important, but poor absorption means you may not be getting those nutrients.

Third, drugs almost always interfere with nutrient absorption and utilization – and half of Americans take at least one prescription drug. Acid blockers (where prescription or over the counter products) reduce absorption of vitamins B12 and C and probably others. Antibiotics, oral contraceptives, and other common medications interfere with many of the B vitamins.

If you want to take the guesswork out of what you need and don't need, find a nutritionally oriented doc who can measure your blood levels of nutrients. Such measurements aren't perfect, but they do provide an idea of what you're absorbing.

The idea that eating right means you don't need supplements belongs in the wastebasket, along with another stupid idea: taking supplements and you'll just make expensive urine. The truth is that everything that goes into the body eventually exits in one form or another. So if someone tells you that vitamins only make expensive urine, remind them that the \$30 steak and \$50 bottle of wine they had in a restaurant made even more expensive urine. – JC

Omega-3 Fish Oil Supplements Help Prevent Psychotic Behavior

Taking omega-3 fish oil supplements can significantly reduce the risk of full-blown psychotic behavior in people at “ultra-high risk,” according to a study in the *Archives of General Psychiatry*. The journal of published by the American Medical Association.

G. Paul Amminger, MD, of the University of Vienna, Austria, and his colleagues treated 81 adolescents and young adults ranging from 13 to 25 years of age. The patients had mild psychotic symptoms, transient psychosis, or a family history of schizophrenia plus a decrease in day-to-day functioning.

Forty-one of the subjects received four fish oil capsules daily, containing a total of 700 mg of eicosapentaenoic acid (EPA) and 480 mg of docosahexaenoic acid (DHA), while 40 were given placebos for 12 weeks.

By the end of the study, people taking the fish oil capsules were one-fifth as likely to develop psychosis, compared with those taking placebos.

Only two (4.9 percent) of those taking fish oils developed psychosis, compared with 11 (27.5 percent) of those in the placebo group.

Furthermore, the benefits related to fish oils were sustained after the patients stopped taking the supplements. In contrast, studies have shown that the benefits of anti-psychotic drugs wear off when patients stop taking them.

Amminger wrote that the fish oils enhance the activity of both the dopamine and serotonin neurotransmitter pathways and also increase brain levels of glutathione, an important antioxidant.

Reference: Amminger GP, Schafer MR, Papageorgiou K, et al. Long-chain omega-3 fatty acids for indicated prevention of psychotic disorders. *Archives of General Psychiatry*, 2010;67: 146-154. □

Magnesium Citrate Supplements Reduce Asthma Symptoms

Taking daily magnesium supplements for six and one-half months significantly improves breathing and overall quality of life among men and women with mild to moderate asthma symptoms.

Alexandra G. Kazaks, PhD, of Bastyr University, Kenmore, Washington, and her colleagues treated 55 people, ages 21 to 55 years of age, with either magnesium citrate supplements or placebos. The supplements provided 170 mg of elemental magnesium twice daily.

Two different breathing tests showed about a 6 percent increase in lung capacity during the course of the study among people taking magnesium. The subjects also experienced less bronchoconstriction and had significant improvements in overall quality of life.

“Magnesium supplementation as a complement to the medical treatment of asthma may reduce airway hyperresponsiveness,” wrote Kazaks.

Editor's note: If the amount of magnesium causes diarrhea, simply reduce the dosage.

Reference: Kazaks AG, Uriu-Adams JY, Albertson TE, et al. Effect of oral magnesium supplementation on measures of airway resistance and subjective assessment of asthma control and quality of life in men and women with mild to moderate asthma: a randomized placebo controlled trial. *Journal of Asthma*, 2010;47:83-92. □

Modest Amount of Vitamin C Improves Blood Circulation

Patients given intravenous vitamin C before undergoing a heart procedure had better blood flow afterwards, compared with people receiving a placebo.

Stefania Basili, MD, of the University of Rome La

Sapienza, Italy, and her colleagues treated 56 patients for stable angina pain. All of the patients underwent angioplasty, which uses a tiny balloon to increase the width of arteries and improve blood flow.

Half of the patients received 1 gram of vitamin C by intravenous drip, and the other half were given a placebo immediately before undergoing the procedures.

A common complication of angioplasty is reduced reperfusion – that is, an impairment of micro-circulation immediately after the procedure. This impairment can range from sluggish to completely impaired blood flow.

Only 4 percent of patients receiving vitamin C had seriously impaired blood flow, compared with 32 percent in the placebo group. According to Basili, 79 percent of the patients receiving vitamin C achieved completely normal blood flow, compared with only 39 percent of those getting placebos.

Reference: Basili S, Tanzilli G, Mangieri E, et al. Intravenous ascorbic acid infusion improves myocardial perfusion grade during elective percutaneous coronary intervention. *JACC Cardiovascular Interventions*, 2010;3:221-229. □

After C-Section, Ointment with St. John's Wort Reduces Scarring

The herb St. John's wort (*Hypericum perforatum*) may be known for its benefits in the treatment of depression, but it also has a long history of use in wound healing. The herb has anti-inflammatory properties and enhances collagen synthesis, a key step in healing.

Sareh Samadi, MSc, of the Mashhad University of Medical Sciences, Iran, and her colleagues asked 144 women to follow one of three protocols after undergoing a Cesarean section following a full-term pregnancy: (1) to apply a cream containing St. John's wort to the incision site, (2) to apply an inactive cream as a placebo, or (3) to use no cream, as a second control group. The creams were applied three times daily for 16 days.

Women using the St. John's wort cream had less pain and itching – and they had significantly faster healing after 10 days, compared with the other two groups. Significantly, the women had less scar formation after 40 days. There were no differences between the placebo and control group.

Samadi wrote that the herb may correct abnormal collagen production and improve the mechanical aspects of wound repair.

Reference: Samadi S, Khadivzadeh T, Emami A, et al. The effect of *Hypericum perforatum* on the wound healing and scar of Cesarean. *Journal of Alternative and Complementary Medicine*, 2010;16:113-117. □

High Levels of Vitamin D Linked to Low Risk of Multiple Diseases

An analysis of 28 studies on vitamin D has found that people with high blood levels of vitamin D have a low risk of developing “cardiometabolic” diseases, including cardiovascular disease, type 2 diabetes, and metabolic syndrome.

Oscar H. Franco, MD, DSc, PhD, of Warwick Medical School, United Kingdom, and his colleagues analyzed data from the studies involving almost 100,000 people.

Overall, people with the highest vitamin D levels had a 43 percent lower risk of cardiometabolic diseases. “The majority (85 percent) of the studies’ results were in agreement with this main finding,” wrote Franco.

People with high vitamin D levels had a 33 percent lower risk of cardiovascular disease, a 55 percent lower risk of type 2 diabetes, and a 51 percent reduced risk of metabolic syndrome.

In a separate study, Mazda Janab, PhD, of the International Agency for Research on Cancer, Lyon, France, and his colleagues analyzed the relationship between vitamin D levels and colorectal cancer.

Drawing on data on 520,000 people from 10 western European countries, the researchers found that high vitamin D levels were associated with a low risk of colorectal cancer and low vitamin D levels were related to a higher risk. People with the highest blood levels of vitamin D had a 40 percent lower risk of colorectal cancer.

References: Parker J, Hashimi O, Dutton D, et al. Levels of vitamin D and cardiometabolic disorders: systematic review and meta-analysis. *Maturitas*, 2010;225-236. Jenab M, Bueno-de-Masquita HB, Ferrari P, et al. Association between pre-diagnostic circulating vitamin D concentration and risk of colorectal cancer in European populations: a nested case-control study. *BMJ*, 2010;3249: doi 10.1136/bmj.b5500. □

Vitamin B6 Levels Influence Inflammation, Risk of Disease

Vitamin B6 supplements were used for the treatment of rheumatoid arthritis back in the 1950s and, later, to reverse carpal tunnel syndrome. A new study by researchers at Tufts University, Boston, Massachusetts, has found that people with high blood levels of vitamin B6 levels have low levels of inflammation.

Jian Shen, PhD, and his colleagues analyzed data from a group of 1,205 Puerto Rican adults living in Boston. He found that people with the highest levels of pyridoxyl-5-phosphate, the active form of vitamin B6, had low levels of C-reactive protein, a marker of

Quick Reviews of Recent Research

• Walnuts improve blood vessel tone

Researchers from Yale University in the United States asked 24 men and women with type 2 diabetes to add about 2 ounces of walnuts to their daily diet for eight weeks. The subjects' blood vessel tone – endothelial function – was measured with a technique called flow-mediated dilation. The walnuts significantly improved the subjects' blood vessel tone, indicating a likely reduction in their overall risk of cardiovascular disease.

Ma Y. *Diabetes Care*, 2010;33:227-232.

• Magnesium is good for the brain

A team of researchers from China and other nations tested the effects of extra magnesium on laboratory rats. They found that increases in brain levels of magnesium improved learning and memory in both young and old animals. The magnesium led to an increase in the number of active synapses – connections between brain cells.

Slutsky I. *Neuron*, 2010;65:165-177.

• Fish oils helpful in recovery from sepsis

Doctors from the United Kingdom and Portugal treated 25 patients with sepsis, giving them either omega-3 fish oils or placebos for five days, in addition to conventional treatment. Patients receiving fish oils had a beneficial decrease in their inflammatory response and had significantly shorter hospital stays, a sign of faster recovery.

Barbosa VM. *Critical Care*, 200;14: doi 10.1186/cc8844.

• Bilberry extract improves blood sugar

Japanese researchers tested the effects of bilberry extract on the blood sugar levels of laboratory mice. The mice, which have a genetic predisposition to diabetes, had lower blood sugar levels and improved insulin function after taking bilberry extract.

Takikawa M. *Journal of Nutrition*, 2010;10.3945/jm.109.118216.

• Vitamin C is major regulator of cell behavior

Several years ago, researchers showed that vitamin C was the only substance (out of 880 tested)

Vitamin B6 and Inflammation...

Continues from previous page

inflammation. Those with high vitamin B6 levels also had comparatively fewer signs of cell damage.

People with metabolic syndrome, obesity, and diabetes were also likely to have low vitamin B6 levels – perhaps reflecting a diet of foods with low nutritional value.

Reference: Shen J, Lai CQ, Mattei J, et al. Association of vitamin B6 with inflammation, oxidative stress, and chronic inflammatory conditions: the Boston Puerto Rican Health Study. *American Journal of Clinical Nutrition*, 2010;91:337-342. □

compounds that prompted the differentiation of stem (generic) cells into heart cells. A recent study found that vitamin C is also the only substance that reprograms adult cells back into stem cells – and also enhanced cell survival. Other antioxidants did not have this effect. Stem cells have the potential to grow into any type of cell, and researchers believe they have enormous potential in regenerating old or damaged tissues.

Esteban MA. *Cell Stem Cell*, 2010;6:71-79.

• Green tea may be good for the eyes

A study by researchers in Hong Kong has found that antioxidant constituents from green tea enter the eye and may help prevent serious eye diseases. The researchers fed green tea extract to laboratory rats. Gallicocatechin, one of the antioxidants, was concentrated in the animals' retina. Epigallocatechine was concentrated in the aqueous humor, the liquid portion of the eye.

Chu KO. *Journal of Agricultural and Food Chemistry*, 2010;58:1523-1534.

• Americans are snacking more

Researchers from the University of North Carolina analyzed the snacking habits of almost 45,000 Americans between 1997 and 2006. During this time, the number of people eating snacks increased, and the sugar and carb content of the snacks increased as well. From 2003 to 2006 alone, the number of people eating snacks jumped from 71 to 97 percent. The types of snacks were predominately desserts, salty snacks, candies, and sweetened soft drinks.

Piernas C. *Journal of Nutrition*, 2010;140:325-332.

• Red yeast rice extracts lower cholesterol

Doctors at the University of Pennsylvania gave red yeast rice extracts to 62 patients with elevated cholesterol levels. The daily supplements decreased LDL cholesterol by 43 mg/dl after 12 weeks.

Becker DJ. *Annals of Internal Medicine*, 2009;150:830-839.

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