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Researchers Find Fish Oil Supplements Give Lung Cancer Patients an Edge

Two studies by a team of Canadian researchers have found that high-dose fish oil supplements improve the effectiveness of chemotherapy among patients with lung cancer and also help patients maintain their weight. The findings are especially significant given the relatively poor prognosis of people diagnosed with lung cancer.

In one study, Vera C. Mazurak, PhD, of the University of Alberta, Edmonton, and her colleagues treated 46 patients with conventional chemotherapy. Fifteen of those patients received fish oils in addition to conventional therapies. All of the patients had been diagnosed with nonsmall cell lung cancer, for which the response rate to treatment is less than 30 percent.

Patients taking fish oils supplemented with capsules providing 2.2 grams of eicosapentaenoic acid (EPA) and 240 mg of docosahexaenoic acid (DHA) daily, or a liquid providing 2.2 grams of EPA and 500 mg of DHA daily.

All of the patients underwent two to four cycles of chemotherapy, and their responses were assessed by an oncologist and a radiologist, based on imaging technology and physical examination.

“The response rates and clinical benefit were approximately 2-fold greater in the fish oil group compared with the [conventional] standard of care group,” wrote the researchers. Sixty percent of patients receiving the fish oils had a complete or partial clinical response, compared with just 26 percent of those receiving only chemo.

In the second study, Mazurak reported that fish oil supplements helped patients with nonsmall cell lung cancer maintain their weight. In this study, 16 patients took the fish oils in conjunction with conventional chemotherapy, while 24 received only chemotherapy.

Sixty-nine percent of the patients taking fish oil supplements maintained their weight, whereas only 29 percent of people undergoing chemotherapy (and

not taking supplements) maintained their weight. Those receiving chemotherapy alone lost an average of 5 pounds of weight during treatment.

In addition, patients with the biggest increase in blood levels of EPA had the greatest gains in muscle.

“The results indicate that supplementation with fish oil ameliorates muscle and adipose tissue wasting in lung cancer patients and provides a benefit over patients treated with standard of care receiving first-line chemotherapy.”

References: Murphy RA, Mourtzakis M, Chu QS, et al. Supplementation with fish oil increases first-line chemotherapy efficacy in patients with advanced nonsmall cell lung cancer. *Cancer*, 2011; doi 10.1002/cncr.25933. Murphy RA, Mourtzakis M, Chu QS, et al. Nutritional intervention with fish oil provides a benefit over standard of care for weight and skeletal muscle mass in patients with nonsmall cell lung cancer receiving chemotherapy. *Cancer*, 2011;117:1775-1782. □

Perspectives

Beware: Health Food Junk Foods

It's no surprise that huge corporations, such as McDonald's and PepsiCo, make billions of dollars each year by foisting junk foods on consumers – junk foods that lead to obesity, diabetes, and heart disease. But there's a part of me that expects something better from the natural foods industry, which often prides itself in organic foods, sustainability, and natural health, and creating small carbon footprints. That's not always the case.

In March I attended the Natural Foods Expo West in Anaheim, where thousands of food and vitamin companies sought to sell their products to health food retailers from around the country. There were some good products, of course, like coconut water and organically raised meats. But there was also a mind-numbing array of health-food junk foods, packed with calories and zero nutritional value.

With three of every four Americans now overweight or obese, I wonder how anyone can

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ethically sell junk food at a natural foods convention. One company was pitching their gluten-free and vegan organic macaroon cookies and organic chewy brownies. Another hawked its calcium-infused cookies, caramel calcium chews, and chocolate-flavored calcium chews.

I have absolutely no issue with companies making a profit. But I do have issues with companies damaging the health of people to make a profit. One should never forget the Latin phrase *caveat emptor* – let the buyer beware. –*JC*

Carnitine Helps Ease Fatigue Caused by Liver Disease

Hepatic encephalopathy (HE) is a serious neuropsychiatric complication of liver cirrhosis. As liver function deteriorates, toxins build up throughout the body and affect cognition, emotions, behavior, and energy levels. Fatigue is common in HE.

Carnitine, a vitamin-like nutrient, plays a key role in cellular energy production, where it aids cells' ability to burn fat for energy. In a new study, researchers report that supplemental carnitine significantly reduces fatigue in patients with HE.

Michele Malaguarnera, MD, of the University of Catania, Italy, and her colleagues treated 121 patients diagnosed with HE. Sixty-one of the patients were diagnosed with grade 1 HE (HE1), and 60 were diagnosed with more serious grade 2 HE (HE2).

Thirty patients in both groups were then given 2 grams of the acetyl-L-carnitine (ALC) form of carnitine twice daily for 90 days. The remaining patients received placebos.

By the end of that time, people taking ALC in the HE1 group showed significant improvements over those taking placebos. Specifically, Malaguarnera noted improvements in both mental and physical fatigue. Meanwhile, people taking ALC in the HE2 group also showed improvements in fatigue and increases in physical activity.

In addition, patients taking ALC in both groups benefited from reductions in ammonia, which results from the breakdown of protein. Normally, the liver breaks down ammonia so that it is harmless. In people with HE, liver function is so poor that it is difficult to clear ammonia from the body, and the excess ammonia affects energy production in the brain. The reduction in ammonia with ALC supplementation pointed to improved liver function.

Reference: Malaguarnera M, Vacante M, Giodano M, et al. Oral acetyl-L-carnitine therapy reduces fatigue in overt hepatic encephalopathy: a randomized double-blind, placebo-controlled study. *American Journal of Clinical Nutrition*, 2011;93:799-808. □

Vitamin E Reduces the Risk of Pneumonia in Some People

A new analysis of data from a controversial study has found that supplemental vitamin E can reduce the risk of pneumonia in some men, depending on other aspects of their lifestyles.

Harri Hemilä, PhD, and Jaakko Kaprio, PhD, of the University of Helsinki, Finland, conducted a subgroup analysis of data from the Alpha-Tocopherol Beta-Carotene Cancer Prevention (ATBC) study, which was conducted in the 1980s and 1990s. The study found – controversially – that synthetic beta-carotene supplements upped the risk of lung cancer in men who smoked tobacco and consumed relatively large amounts of alcohol.

In Hemilä and Kaprio's analysis, the researchers focused on the effect of vitamin E supplements (50 IU daily) on the risk of developing pneumonia. Of the 29,133 men in the study, 898 developed pneumonia and were treated for it in hospitals.

Hemilä and Kaprio reported that vitamin E supplements decreased the risk of pneumonia by 69 percent, but only among men who smoked the least or not at all and who also exercised. In sharp contrast, vitamin E seemed to increase the risk of pneumonia among men who were the heaviest smokers and also did not exercise.

The findings pointed to the importance of how lifestyle habits and supplements can interact.

Reference: Hemilä H, Kaprio J. Subgroup analysis of large trials can guide further research: a case study of vitamin E and pneumonia. *Clinical Epidemiology*, 2011;3:51-59. □

Adequate Vitamin D Levels Might Improve Survival in ICU Patients

Getting vitamin D supplements in the hospital might improve patients' odds of surviving a stay in the intensive care unit (ICU), according to an analysis of hospitalized veterans.

Vitamin D plays important roles in maintaining immunity and helping the body fight infections, according to Alan N. Petris, MD, PhD, of the Mountain Home Veteran's Administration Medical Center in Tennessee. For example, the vitamin boosts the body's production of beta defensin 2 and cathelicidin, which help fight infections.

According to Petris, checking the vitamin D levels of patients and providing supplements might just lower the risk of contracting infections in ICUs, as well as reduce ICU stays and costs. ICU costs are about seven times higher than non-ICU hospital costs.

Petris studied 136 veterans who spent time in the

ICU and who also had their vitamin D levels measured during the month before hospital admission.

On average, vitamin D levels in the group were low – 24.6 ng/ml, compared with a normal range of 30 to 100 ng/ml. Thirty-eight percent of the veterans had outright deficiencies of vitamin D, with levels below 20 ng/ml.

But Petris’s study came up with two significant findings. First, veterans who were deficient in vitamin D were twice as likely to stay in the ICU for three days or longer – 58 percent versus 29 percent. Second, veterans who were deficient in vitamin D were almost twice as likely to die in the ICU.

Petris wrote that “patients who survived, compared with those who did not, had significantly higher...vitamin D levels, and were significantly less likely to be classified as vitamin D deficient.”

He concluded by noting that vitamin D supplements may be an “inexpensive approach” to improving patient outcomes and reducing health-care costs.

Reference: McKinney JD, Bailey BA, Garrett LH, et al. Relationship between vitamin D status and ICU outcomes in veterans. *Journal of the American Medical Directors Association*, 2011;12:208-211. □

Vitamin D May Lower Risk of Age-Related Eye Disease

Several nutrients are known to reduce the risk of age-related macular degeneration (AMD) – lutein, zeaxanthin, and the omega-3 fish oils. According to a new study, vitamin D can be added to the list.

AMD is the leading cause of blindness among seniors and affects an estimated 8.5 million Americans.

Amy E. Millen, PhD, of the University of Buffalo, New York, analyzed photographs taken of the retinas of 1,312 women, as well as vitamin D levels and various risk factors for eye disease for the women.

According to Millen, women under the age of 75 who maintained relatively high levels of vitamin D, from food or supplements, had about one-half the risk of developing AMD.

Reference: Millen AE, Volland R, Sondel SA, et al. Vitamin D status and early age-related macular degeneration in post-menopausal women. *Archives of Ophthalmology*, 2011;129:481-489. □

More Evidence that Cranberries Help in Urinary Tract Infections

Supplements containing whole cranberry powder can reduce the chances of developing recurrent urinary tract infections (UTIs), and the benefits

appear related to the amount of cranberry powder.

Archana Chatterjee, MD, PhD, of the Creighton University Medical Center, Omaha, Nebraska, and her colleagues asked 60 women, ages 18 to 40 years of age, with recurrent UTIs to participate in a three-month study. The women were given 500 or 1,000 mg of standardized whole cranberry powder daily or no treatment at all.

After taking the cranberry supplements for 10 days, the subjects had significant reductions in *E. coli* bacteria in their urine. Furthermore, the lower dose of cranberry powder reduced the recurrence of UTIs by 36 percent, while the higher dose reduced UTIs by 65 percent during the study. No symptom relief occurred in the untreated control group.

Reference: Sengupta K, Alluri KV, Golakoti T, et al. A randomised, double-blind, controlled, dose dependent clinical trial to evaluate the efficacy of a proanthocyanadin standardized whole cranberry (*Vaccinium macrocarpon*) powder on infections of the urinary tract. *Current Bioactive Compounds*, 2011; 7:39-46. □

Taking Creatine Helps Patients with Muscular Dystrophies

Body builders often use creatine monohydrate to bulk up and increase muscle strength, although supplements have seen their share of controversy over the years. Despite that controversy, some doctors have reported that creatine supplements can benefit patients with serious muscle disorders.

Now, in a new analysis of published studies, researchers have confirmed that creatine can benefit people with muscular dystrophies and other serious muscle diseases.

Working under the auspices of the Cochrane Collaboration, Rudolf A. Kley, MD, of Ruhr University, Germany, and his colleagues analyzed 14 controlled human studies involving 364 participants. The subjects had been diagnosed with either muscular dystrophy or an inflammatory disease of the muscles.

According to Kley, people taking creatine supplements felt almost five times better than those who had been taking placebos. He also wrote that “creatine treatment increases muscle strength in muscular dystrophies.”

Energy in muscle and other cells is stored in the form of adenosine triphosphate (ATP). When ATP is used, it gets converted to adenosine diphosphate (ADP). Creatine works by helping the body recycle ADP back to ATP. The typical supplemental amount of creatine is 5 to 10 grams daily.

Reference: Kley RA, Tamopolsky MA, Vorgerd M. Creatine for treating muscle disorders. *Cochrane Database of Systematic Reviews*, 2011;16:CD004760. □

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Quick Reviews of Recent Research

• Zinc may reduce prostate cancer death

Swedish researchers analyzed dietary zinc intake in a group of 525 men. After an average follow up of six and one-half years, men with high zinc intake were 36 percent less likely to die from prostate cancer. The greatest benefit occurred among men with localized tumors. In this group, high zinc intake was associated with a 76 percent lower risk of dying from prostate cancer.

Epstein MM. *American Journal of Clinical Nutrition*, 2011;93:586-593.

• Parkinson patients have low vitamin D

Add one more health problem that may be impacted by low levels of vitamin D: Parkinson disease. Researchers at the Emory University School of Medicine, Atlanta, measured vitamin D levels in 170 people who had early Parkinson disease and had not yet been treated. Of these, 70 percent had borderline deficiencies and 26 percent had outright deficiencies of vitamin D. Retesting a year later found some improvements – 51 percent of patients had borderline deficiencies and 7 percent had serious vitamin D deficiencies. The vitamin is involved in several biochemical reactions that can influence the progression of Parkinson disease.

Evatt ML. *Archives of Neurology*, 2011;68:314-319.

• High-protein diet has cognitive benefits

Twenty-three healthy young men were asked by Danish researchers to consume either a high-protein or “usual” protein diet for three weeks. The usual-protein diet consisted of 1.5 grams of protein daily (approximately 105 grams for a 150-pound man), while the high-protein diet provided twice that amount. Men eating the high-protein diet developed faster reaction times, according to cognitive tests.

Jakobsen LH. *Clinical Nutrition*, 2011: epub ahead of print.

• Vitamin D fortified yogurt improves glucose

Both vitamin D and calcium play important roles in regulating blood sugar and insulin. In this study, researchers from Tehran, Iran, asked 90 patients with type 2 diabetes to consume one of three yogurt drinks twice daily for 12 weeks. The drinks consisted of plain yogurt, yogurt fortified with 500 IU of vitamin D3 and 150 mg of calcium, and yogurt fortified with 500 IU of vitamin D3 and 250 mg of calcium. People consuming either of the fortified yogurt drinks had significant decreases in fasting glucose, HbA1c, HOMA-IR (a combined measure of glucose and insulin), waist circumference, and body-mass index.

Nikooyeh B. *American Journal of Clinical Nutrition*, 2011; doi 10.3945/ajcn.110.007336.

• Fish oils don't increase surgical bleeding

Fish oil supplements don't increase blood loss or post-surgical bleeding, at least among patients undergoing low-back surgery, according to a study conducted at the Hospital for Special Surgery in New York City. Doctors followed 95 patients, 16 of whom took fish oil supplements within 14 days of surgery. On average, they stopped taking the supplements about two days before surgery. Patients who had been taking fish oil supplements did not have an increased risk of bleeding during or after surgery. Rather, patients who had not taken fish oil capsules had slightly greater blood loss, and two patients had complications related to bleeding.

Kepler CK. *Journal of Spinal Disorders and Techniques*, 2011: epub ahead of print.

• Supplements help with insomnia

Italian doctors treated 43 people with insomnia, using a combination of melatonin (5 mg), magnesium (225 mg), and zinc (11.25 mg) or placebo daily for eight weeks. The supplements were taken one hour before bedtime. By the end of the study, people taking the combination of supplements led to greater ease in getting to sleep, higher quality of sleep, better alertness on waking, and less grogginess when waking.

Rondanelli M. *Journal of the American Geriatric Society*, 2011;59:82-90.

• Cherry juice enhances exercise recovery

British researchers asked 10 well-trained athletes to consume either tart cherry juice or a noncherry fruit juice for seven days before and two days after intensive exercise. Their responses were compared with intensive exercise without cherry juice. The cherry juice enhanced muscle recovery after exercise.

Botwell JL. *Medicine and Science in Sports and Exercise*, 2011: epub ahead of print.

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