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High-Dose Intravenous Vitamin C Helps in Treating Painful Shingles Infections

A shingles infection, caused by the herpes zoster (*varicella zoster*) virus, can cause some of the most intense pain imaginable – and the post-infection pain sometimes lasts for months or years. But a new study has found that treatment with high-dose intravenous (IV) vitamin C can reduce pain and speed the healing process.

The zoster virus is the same one that causes chicken pox, and anyone who has had this childhood disease risks developing a shingles, or zoster, infection as an adult. After a chicken pox infection, the virus goes dormant in nerve cells. The risk of a shingles outbreak increases sharply after age 60, during cancer treatment, or when a person has a weakened immune system.

The infection can occur anywhere on the body, but it is typically preceded by sharp localized pains, leading to blistering of the skin, scabs, and lingering pain – the latter called post-herpetic neuralgia. The most common outbreak develops on the right side of the chest, side, and back. Conventional doctors prescribe antiviral drugs, such as acyclovir, to suppress the virus.

Martin Schencking, MD, of the Heart-Jesus Hospital, Dernbach, Germany, and his colleagues enlisted the help of 16 general practitioners, who administered IV vitamin C to 67 patients with a shingles infection. The patients received various doses up to about 100 grams of vitamin C daily for around two weeks, and then they were followed up for up to another 12 weeks. Schenkling compared the patients' responses to people in a separate study that used a similar methodology, but no vitamin C.

More than 92 percent of patients showed a decrease in pain, and only 6.4 percent developed long-term post-infection pain after receiving IV vitamin C. In addition, the IV vitamin C reduced the number of affected nerves.

At the beginning of the study, blisters were observed in almost 33 percent of patients, but in only 3 percent (two patients) during the follow-up period. By the end of the study, 86 percent of patients were free of scars.

Finally, according to Schencking, almost half of the patients reported feelings of "general fatigue" at the beginning of the IV vitamin C treatment. About 78 percent of those patients improved with the IV vitamin C. The mental concentration of people receiving IV vitamin C also improved.

Reference: Schencking M, Vollbracht C, Weiss G, et al. Intravenous Vitamin C in the treatment of shingles: Results of a multicenter prospective cohort study. *Medical Science Monitor*, 2012;18:CR215-224. ❑

Perspectives

Just Say No to Dental X-Rays

Dental x-rays have long been a routine part of oral care, but I've long believed they have been over-used.

Call me a cynic, but my sense is that annual or biannual x-rays have become a small "profit center" for many dental offices. After undergoing countless dental x-rays when I was young, when I knew better I finally told my dentists to be less aggressive in pushing their x-rays. And, it wasn't until I was an adult that a dentist provided a lead apron and neck cover – after I requested them.

The risk should be obvious: x-rays expose the brain and thyroid gland to radiation, which can lead to cell mutations.

It wasn't entirely a surprise, then, when an article in the journal *Cancer* recently showed an association between the number of dental x-rays and the risk of developing meningiomas, the most commonly diagnosed type of brain tumor. Although meningiomas are benign, no type of brain tumor – benign or cancerous – is good.

Of course, the American Dental Association said that the study showed only an association and not

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cause-and-effect. In addition, dental x-rays now provide a lower dose of radiation compared with what people received in the 1960s, as if that does any good to people who got dental x-rays decades ago.

Don't you just love how organizations minimize unflattering research?

I have refused to submit to dental x-rays for several years. I have little need to since I have not experienced dental pain. Some of my friends have found that their dentists now refuse to treat them unless they agree to x-rays. I don't like the idea of having my brain irradiated, and you shouldn't either. *–JC*

Researchers Explore How Eating Habits Are Affected by Burnout

Many people overeat or opt for comfort foods when they feel stressed. A new study has found that feeling burned out at work can have disastrous effects on women's eating habits.

Nina Nevanpera, MS, of the Finnish Institute of Occupational Health, and her colleagues studied 230 working women, ages 30 to 55 years, for one year. They looked specifically at how feelings of burnout affected the women's eating habits and weight.

According to Nevanpera's article, occupational burnout consists of "exhaustive fatigue, cynicism, and lost self-respect caused by chronic work stress." Previous studies have found that burnout is associated with overweight, type 2 diabetes, and cardiovascular disease.

The women were evenly divided between being of normal weight, overweight, and obese. Twenty-two percent had experienced some degree of burnout when the study began.

Women who felt burned out at the beginning or end of the study were far more likely to experience either emotional or uncontrolled eating, compared with those who did not suffer from burnout. In contrast, women without burnout were less likely to experience uncontrolled eating.

Nevanpera wrote that women with feelings of burnout "have a hindered ability to make changes in their eating behavior."

She suggested that higher fiber diets and avoiding delays between meals might help.

She added, "We recommend that burnout should be treated first and that burnout and eating behavior should be evaluated in obesity treatment."

Reference: Nevanpera N, Hopsu L, Kuosma E, et al. Occupational burnout, eating behavior, and weight among working women. *American Journal of Clinical Nutrition*, 2012;95:934-943. ❑

Vitamin K Boosts Bone-Building Effects of Vitamin D and Calcium

Adding either vitamin K1 or K2 enhances the bone-building benefits of milk or yogurt fortified with vitamin D and calcium, according to a study by researchers in Greece.

Yannis Manios, PhD, of Harokopio University, Athens, and his colleagues asked 173 postmenopausal women to consume one of several types of milk or yogurt for one year. The dairy products were fortified with 800 mg of calcium and 400 IU of vitamin D3. Some of the women were also given dairy products containing either 100 mcg of vitamin K1 or K2 (MK-7 form). In addition, there was a control group for comparison.

All of the women in the intervention groups also attended biweekly nutrition counseling meetings.

Women consuming the dairy products containing extra calcium and vitamin D had improvements in bone mineral density – that is, stronger bones. But women getting either form of vitamin K also benefited from increases in their levels of activated osteocalcin.

Osteocalcin, a protein, helps form a matrix that holds bone minerals in place. Vitamin K is needed to activate osteocalcin – through a process called carboxylation – so the protein can do its job.

Although all the women consuming fortified dairy products had improvements in bone density, only those getting vitamin K benefited from increases in bone mineral density in their vertebrae and lower back.

The researchers wrote that "further clinical trials, probably of longer duration and higher vitamin K doses, could help clarify the exact role of each one of these two vitamin K isoprenologues on bone metabolism and bone mineral density."

Reference: Kanellakis S, Moschonis G, Tenta R, et al. Changes in parameters of bone metabolism in postmenopausal women following a 12-month intervention period using dairy products enriched with calcium, vitamin D, and phylloquinone (vitamin K1) or menaquinone-7 (vitamin K2): the postmenopausal health study II. *Calcified Tissue International*, 2012;90: doi 10.1007/s00223-012-9571-z. ❑

Inflammation and Fatigue Linked Among Breast Cancer Survivors

High levels of inflammation may promote fatigue in women who have been treated for and survived breast cancer, according to a new study. Both inflammation and fatigue may be improved with dietary changes.

Catherine M. Alfano, MD, of the National Cancer Institute, Bethesda, Maryland, collaborated with researchers at numerous medical centers and universities to analyze data from 633 breast cancer survivors. The women had an average age of 56 years and were previously treated for stage 1, 2, or 3 breast cancer.

"Fatigue is common among breast cancer survivors and may persist for years after cancer treatment, clustering with comorbid symptoms such as depression, anxiety, sleep disturbance, and pain that reduce participation in life activities and quality of life," wrote Alfano and her colleagues.

Forty percent of women in the study had elevated blood levels of C-reactive protein (CRP), a marker of inflammation, and 40 percent also had fatigue.

Women with elevated CRP levels were 1.8 times more likely to feel fatigued.

Alfano and colleagues also looked at the women's intake of anti-inflammatory omega-3 fats and generally pro-inflammatory omega-6 fats. Higher intake of omega-6 fats, found in most cooking oils and processed foods, was associated with both higher CRP levels and a 2.6 greater likelihood of feeling fatigue.

In fact, women with the lowest intake of omega-3 fats and a relatively high intake of omega-6s were 4.5 times more likely to have a "high-risk" CRP level.

"Future studies should confirm these associations and potentially test whether supplementation with omega-3 polyunsaturated fatty acids can reduce inflammation in breast cancer survivors."

Reference: Alfano CM, Imayama I, Neuhouser ML, et al. Fatigue, inflammation, and omega-3 and omega-6 fatty acid intake among breast cancer survivors. *Journal of Clinical Oncology*, 2012: doi 10.1200/JCO.2011.36.4109. ❑

White Rice Consumption May Raise Risk of Type 2 Diabetes

Next time you eat Chinese food or sushi, you might go easy on the white rice. An analysis of four studies found that regularly consuming white rice may increase the risk of developing type 2 diabetes.

Qi Sun, MD, ScD, and his colleagues at the Harvard Medical School, Boston, analyzed data from more than 352,000 people, 13,284 of whom had been diagnosed with diabetes. The studies included Chinese, Japanese, and American populations.

Sun assumed that each serving of white rice was equivalent to 158 grams, or about 5.6 ounces, of cooked rice.

Not surprisingly, Asians consumed much more white rice compared with Americans. Asian populations that had a relatively high consumption of white rice (three or four servings daily) were 55 percent more likely to develop type 2 diabetes, compared with people who consumed only one or two servings per week.

Americans who consumed a lot of white rice had only a 12 percent increase in diabetes risk.

Reference: Hu EA, Pan A, Malik V, et al. White rice consumption and risk of type 2 diabetes: meta-analysis and systematic review. *British Medical Journal*, 2012:344:e1415. ❑

Low Vitamin D Levels Linked to Poor Outcomes and Death

Nutritional deficiencies don't benefit anyone – and inadequate levels of vitamin D are associated with an increased risk of death among severely ill patients.

Howard Amital, MD, of the Sheba Medical Center, Israel, and his colleagues tracked 130 patients who were admitted to intensive care units (ICUs) or internal medicine wards and required mechanical ventilation. The patient diagnoses included life-threatening infections, heart attacks, congestive heart failure, and trauma.

Amital and his colleagues measured the patients' blood levels of vitamin D and tracked the patients' outcomes, including death.

The *average* vitamin D level among the 130 patients was 14 ng/ml – well into the deficiency range. The vast majority of patients – 107 – were deficient in vitamin D, using 20 ng/ml as the cutoff. (Many doctors believe that any level below 30 ng/ml constitutes a deficiency.)

On average, patients who were deficient in vitamin D had shorter lengths of survival, living for an average of 15 days, compared with 24 days for those who had higher blood levels of vitamin D.

Forty-four percent of the patients died within 60 days.

Reference: Arnson Y, Gringauz I, Itzhaky D, et al. Vitamin D deficiency is associated with poor outcomes and increased mortality in severely ill patients. *Quarterly Journal of Medicine*, 2012: doi 10.1093/qjmed/hcs014. ❑

Vitamin C Supplements Might Benefit People with Hypertension

Taking vitamin C supplements can lead to modest decreases in blood pressure – a benefit that might help people who are borderline hypertensive.

Edgar R. Miller III, M.D., PhD, of the Johns Hopkins School of Medicine, Baltimore, and his colleagues analyzed 29 clinical trials in which researchers gave vitamin C supplements to people

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Quick Reviews of Recent Research

• Omega-3 levels influence heart rhythm

Researchers at Harvard University studied 3,326 American men and women age 65 and older. Atrial fibrillation was eventually diagnosed in 789 of the subjects. People with the highest total omega-3 levels had a 29 percent lower risk of developing atrial fibrillation. Most of the benefits were attributed to high levels of docosahexaenoic acid (DHA), which was associated with a 23 percent lower risk of atrial fibrillation.

Wu JHY. *Circulation*, 2012;125:1084-1093.

• Quercetin absorption better with food

Quercetin, an antioxidant found in the skins of apples and onions, appears to be better absorbed when taken with food than in capsules by itself. In a small crossover study, German researchers asked six young women to take either capsules containing 130 mg of quercetin or eat a cereal bar fortified with the same amount of quercetin. Tests showed that blood levels of quercetin increased five times higher after the subjects ate the bar compared with the capsules.

Egert S. *British Journal of Nutrition*, 2012;107:539-546.

• Curcumin eases rheumatoid arthritis

Curcumin, an extract of turmeric root, is a powerful natural anti-inflammatory substance. Doctors from the United States and India selected 45 patients with rheumatoid arthritis and gave them either 500 mg daily of a patented curcumin extract (BCM-95), 100 mg daily of the prescription analgesic drug diclofenac sodium, or a combination of both. Patients in all three groups improved, but the highest percentage of improvement occurred in the group taking only curcumin supplements. Furthermore, curcumin did not cause any side effects.

Chandran B. *Phytotherapy Research*, 2012: doi 10.1002/ptr.4639.

• Higher doses of vitamin D better than lower

Australian researchers compared how well two different dosages of vitamin D corrected deficiencies. Thirty subjects who were deficient in the vitamin (blood levels less than 20 ng/ml) were given either 2,000 IU or 5,000 IU of vitamin D daily for three months. In addition to measuring the subjects' blood levels of vitamin D, the researchers measured grip strength and other markers of physical health. Of the 15 people getting 2,000 IU of vitamin D daily, only 45 percent achieved blood levels of 30 ng/ml or higher. Meanwhile, of the 15 people getting 5,000 IU daily, 93 percent achieved blood levels of vitamin D 30 ng/ml or higher, and their average blood level was a near optimal 45 ng/ml (114 nmol/L). In addition, all of the subjects benefited from improvements in grip strength – vitamin D is essential for normal muscle synthesis and function.

Diamond T. *Osteoporosis International*, 2012: epub ahead of print.

• Sodium alginate can reduce blood sugar

Supplements of sodium alginate, an extract of seaweed, appear to reduce blood sugar. Researchers at Sheffield University, U.K., tested a beverage containing 1.5 grams of sodium alginate and 700 mg of calcium carbonate. The combination of nutrients lowered peak blood sugar levels by 14 percent and post-meal increases in blood sugar by 52 percent.

Harden CJ. *Journal of Functional Foods*, 2012;4:122-128.

Vitamin C and Hypertension...

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with or without high blood pressure. The studies included 10 to 120 patients, and the vitamin C dosage in those studies ranged from 200 to 4,000 mg daily, with an average of 500 mg. The average length of the studies was eight weeks.

Miller found that vitamin C supplements led to an average decrease of almost 4 mm Hg systolic (upper number) blood pressure. Among people diagnosed with hypertension, vitamin C supplements led to almost a 5 mm Hg decrease in systolic blood pressure.

Vitamin C supplements led to about the same decrease in diastolic (lower number) blood pressure – 1.48 mm Hg overall and 1.67 mm Hg among those with hypertension.

Although these changes were modest, they are most likely to benefit people with borderline or mild hypertension.

Reference: Juraschek SP, Guallar E, Appel LJ, et al. Effects of vitamin C supplementation on blood pressure: a meta-analysis of randomized controlled trials. *American Journal of Clinical Nutrition*, 2012;95:1079-1088. ❑

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