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For Women with Melasma, a Skin Disorder, a Vitamin C Cream Works As Well as Drugs

If you or your significant other watch the Oh! Oxygen Channel, or other television programming for women, you likely have seen commercials about melasma, a skin disorder. Viewers are encouraged to visit their physician and to have the condition treated with a prescription drug.

Melasma, sometimes called the “mask of pregnancy,” describes darkened patches of skin on the face. It is most common in pregnant women, those who take oral contraceptives (as a drug side effect), nonpregnant Hispanic and Asian women, and women who are regularly exposed to sunlight.

But a recent study has found that a vitamin C cream works just as well as a hydroquinone bleaching cream in reversing melasma.

Benjamin Moncada, MD, a dermatologist at the University of San Luis Potosí, Mexico, and his colleagues treated 16 women who had melasma for periods ranging from 8 months to 23 years. The women, ages 23 to 43 years, applied a 4 percent hydroquinone cream to one side of the face and a 5 percent vitamin C cream to the other side each night for 16 weeks. The women were also asked to apply sunscreen to both sides of the face during the day.

The women were evaluated at the beginning of the study and then each month with colorimetry, digital photography, and regular color photographs. They were also asked for their own subjective opinions of any change in their skin pigmentation.

Subjectively, 93 percent of the women achieved good or excellent results with the hydroquinone cream, whereas 62.5 percent had similar results with the vitamin C cream. However, according to Moncada, more objective colorimetric comparisons showed that both hydroquinone and vitamin C worked equally well.

He pointed out that vitamin C might have other advantages. Almost 69 percent of the women experienced skin irritation with the hydroquinone cream, whereas only 6 percent had side effects from the vitamin C cream. Moncada wrote that because

vitamin C was well tolerated, it “could be used for longer periods” and likely at double the strength.

Moncada also pointed out that vitamin C is known to reduce melanin production in skin cells and also has a mild sunscreen effect. “We can conclude that L-ascorbic acid [vitamin C] has a beneficial effect on melasma, with a minimum of adverse effects,” he wrote.

Reference: Espinal-Perez LE, Moncada B, Castanedo-Cazares JP. A double-blind randomized trial of 5% ascorbic acid vs 4% hydroquinone in melasma. *International Journal of Dermatology*, 2004;43:604-607. □

For Men or Women, Vitamin B12 Cream May Help in Atopic Dermatitis

A cream containing vitamin B12 can reduce itching and other symptoms of atopic dermatitis, a type of skin inflammation and itching caused by allergic reactions. People with eczema and psoriasis are among those likely to benefit from it.

Markus Stücker, MD, of Ruhr University, Bochum, Germany, and his colleagues treated 41 men and women, ages 18 to 70 years, who had suffered from atopic dermatitis for at least two years. The patients were instructed to apply the vitamin B12 cream to one side of the body and a placebo cream to the other side twice daily for eight weeks. Because the study was double-blind, none of the patients knew which cream contained the vitamin B12.

At the beginning and end of the study, the patients’ dermatitis was graded using a standard clinical evaluation.

Skin areas treated with the vitamin B12 cream benefited from a dermatitis score that improved by 55 points (from 100). In contrast, areas treated with the placebo improved by only 29 points. “The treatment effect in the vitamin B12-containing cream group was roughly double that of the placebo group,” Stücker wrote.

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Vitamin B12 helps regulate immune cells and, based on research cited by Stücker, can reduce inflammation.

One drawback to the cream was its red color, resulting from the natural color of the vitamin. "This can at first be a little displeasing for the patient, but it was accepted well by the patients in this study because the cream was rapidly absorbed by the skin," Stücker.

Reference: Stücker M, Pieck C, Stoerb C, et al. Topical vitamin B12 – a new therapeutic approach in atopic dermatitis – evaluation of efficacy and tolerability in a randomized placebo-controlled multicentre clinical trial. *British Journal of Dermatology*, 2004;150:977-983. □

Melatonin Supplements Found to Prevent Migraine Headaches

Melatonin supplements can significantly reduce the occurrence of migraine headaches, according to a recent study.

Melatonin, a hormone produced by the pineal gland, plays a central role in regulating the body's circadian rhythm. Many migraine headaches occur at similar times in daily or monthly circadian rhythms.

Mario F.P. Peres, MD, of Sao Paulo, Brazil, and his colleagues used melatonin to treat 34 patients with a history of two to eight migraine headaches per month. The patients were asked to take 3 mg of melatonin daily, 30 minutes before bedtime, for three months.

Thirty-two patients completed the study, and 25 of them (78 percent) benefited from at least a 50 percent reduction in migraine headaches. None of the patients had an increase in headaches.

Eight patients (25 percent) had a complete elimination of headaches, and seven (22 percent) had a 75 percent reduction. Ten patients had a 50 to 75 percent reduction in the number of migraine headaches.

One patient dropped out of the study because of excessive sleepiness, a common side effect with high doses of melatonin, and another stopped after experiencing hair loss.

Reference: Peres MFP, Zukerman E, da Cunha Tanuri F, et al. Melatonin, 3 mg., is effective for migraine prevention. *Neurology*, 2004;63:757. □

Vitamin D May Alter Gene Behavior in Breast and Prostate Cancer

Vitamin D may reduce the risk of breast and prostate cancer, particularly in people who have subtle genetic defects that affect how their body uses the vitamin.

Vitamin D utilization is governed by the vitamin

D receptor (VDR) gene. However, 15 polymorphisms – common variations – have been identified in this gene. Most, and perhaps all, of these polymorphisms reduce the body's ability to use vitamin D.

Kay W. Colston, PhD, of St. George's Hospital Medical School, London, analyzed VDR polymorphisms in 398 British women with breast cancer and 427 women without the disease. She found that two specific VDR variations were associated with an increased risk of breast cancer, one of them nearly doubling the risk.

Colston also found that women with metastatic breast cancer were most likely to have these VDR variations. She wrote that "VDR polymorphisms are associated with breast cancer risk and may be associated with disease progression."

In a separate study, Alice S. Whittemore, PhD, of the Stanford University School of Medicine, California, and her colleagues investigated the prevalence of five VDR polymorphisms in men. The study focused on 232 white men with prostate cancer and 171 men without the disease, and 113 African-American men with prostate cancer and 121 disease-free men.

Whittemore reported that none of the five CDR polymorphisms was associated with prostate cancer in white men. However, one of the VDR variations was associated with a greater risk of prostate cancer in African-Americans.

She wrote that "vitamin D...inhibits cancer cell growth, angiogenesis, and metastasis...[and] may be useful for treatment by...blocking prostate cancer cell adhesion and migration."

Reference: Guy M, Lowe LC, Bretherton-Watt D, et al. Vitamin D receptor gene polymorphisms and breast cancer risk. *Clinical Cancer Research*, 2004; 10;5472-5481. Oakley-Girvan I, Feldman D, Ecclescall TR, et al. Risk of early-onset prostate cancer in relation to germ line polymorphisms of the vitamin D receptor. *Cancer Epidemiology, Biomarkers & Prevention*, 2004;13:1325-1330. □

Elevated Homocysteine Levels Linked to Deterioration of Brain Cells

High blood levels of homocysteine are related to changes deep in the brain that can affect thinking and increase the risk of Alzheimer's disease, according to a study by Australian researchers.

Elevated homocysteine levels are a sign of inadequate intake of B vitamins, particularly folic acid and vitamins B6 and B12. They are a known causative factor in heart disease, stroke, and Alzheimer's disease.

Perminder Sachdev, MD, PhD, of the University of New South Wales, and colleagues analyzed the health of 196 men and 189 women, ages 60 to 64 years

of age. The subjects underwent blood tests, magnetic resonance imaging (MRI) of the brain, and cognitive-function tests.

Sachdev found that changes in deep brain tissue, called “deep white matter hyperintensities,” visible on MRI images, were strongly associated with elevated homocysteine levels. The researchers wrote that their finding “may be functionally relevant in the form of mild cognitive impairment.” They also recommended that homocysteine levels be lowered early in life to prevent brain damage.

Most of the patients had normal blood levels of B vitamins, suggesting that they might have higher-than-normal genetic requirements for these nutrients.

Reference: Sachdev P, Salonikas C, Lux O, et al. Homocysteine and the brain in midadult life. *Archives of Neurology*, 2004;61:1369-1376. □

Mediterranean-Style Diet Reduces Risk of Death and Reverses Prediabetes

Eating a Mediterranean-style diet can significantly reduce a person’s risk of death from heart disease, cancer, and all other diseases. Furthermore, such a diet stands a good chance of reversing – in just two years – metabolic syndrome, also known as Syndrome X and prediabetes, according to two new studies.

In the first study, Kim T. B. Knoops, MSc, of Wageningen University, the Netherlands, and colleagues tracked the health of 1,507 apparently healthy men and 832 women, ages 70 to 90 years, in 11 European nations. After analyzing the subjects eating and lifestyle habits, Knoops tracked their health for 10 years.

Eating a Mediterranean diet, drinking only moderate amounts of alcohol, exercising a little, and not smoking each significantly reduced the risk of death during the study. Following all four of these lifestyle habits reduced the risk of death from all causes by almost two-thirds (65 percent).

Conversely, people who did not follow these dietary and lifestyle habits were more than 60 percent more likely to die from heart disease, other cardiovascular diseases, cancer, and any other cause, according to an article in the *Journal of the American Medical Association*.

In the other study, Dario Giugliano, MD, PhD, of the University of Naples, Italy, and his colleagues asked 180 men and women, most in their 40s, to follow either a Mediterranean-style diet (high in fish, vegetables, fruits, whole grains, and olive oil) or a “prudent” high-carb, low-protein, low-fat diet.

All of the subjects had been diagnosed with metabolic syndrome, a prediabetic condition that involves abdominal obesity and elevated cholesterol

levels. Giugliano and his colleagues measured a battery of factors in the patients, including inflammation of blood vessels and blood vessel stiffness.

The results, after two years, were dramatic. Only 40 of the 90 people eating the Mediterranean diet still had signs of metabolic syndrome, compared with 78 of the 90 in the high-carb diet group. People eating the Mediterranean diet had significant decreases in body weight, blood pressure, blood sugar, insulin, total cholesterol, and triglyceride. They also had significant increases in the “good” high-density lipoprotein form of cholesterol.

Tests found that their blood vessels were more flexible, and they also had lower levels of C-reactive protein and interleukin 6, indicated less inflammation.

References: Knoops KTB, de Groot LC, Kromhout D, et al. Mediterranean diet, lifestyle factors, and 10-year mortality in elderly European men and women. *JAMA*, 2004;292:1433-1439. Esposito K, Marfella R, Ciotola M, et al. Effect of a Mediterranean-style diet on endothelial dysfunction and markers of vascular inflammation in the metabolic syndrome. *JAMA*, 2004;292:1440-1446. □

Amino Acid Supplements Help Maintain Muscle Mass in Sedentary People

A supplement containing essential amino acids and glucose can help maintain muscle and reduce the loss of strength in inactive people.

The loss of muscle is inevitable in many situations, such as during prolonged bedrest after illness or surgery, exposure to low gravity, and during the normal progression of aging. The loss of muscle (lean body mass) results from an increase in protein breakdown and a decrease in new protein synthesis. The resulting muscle atrophy principally affects the legs and lower back.

According to Douglas Paddon-Jones, MD, of the University of Texas Medical Branch, Galveston, supplements of essential amino acids rapidly increase blood levels of amino acids by five times – far beyond that of amino acids in foods. Amino acids, the building blocks of proteins, stimulate the body’s production of new proteins.

In a study, Paddon-Jones and his colleagues asked 13 healthy men to spend most of their time in bed for 28 days. All of the men ate a conventional diet, but seven received daily supplements containing 16.5 grams of essential amino acids and 30 grams of glucose. Blood tests and muscle biopsies were taken on the first and last day of the study.

Men taking the supplement maintained normal muscle mass in their legs, whereas nonsupplemented

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Quick Reviews of Recent Research

• St. John's wort eases vague medical problems

Clinicians use the term "somatoform disorders" to describe patients who are convinced they have a medical disorder, but for whom tests and examinations have failed to identify any specific disease. German physicians recently used St. John's wort to treat 184 men and women, ages 18 to 65 years, diagnosed with somatoform disorders (but without serious depression). Half of the subjects received the herb (300 mg extract twice daily) and the others received placebos for six weeks. At the end of the study, 44.2 percent of the patients taking St. John's wort described themselves as improved, compared with only 24.7 percent of those taking placebos.

Muller T, et al. *Psychosomatic Medicine*, 2004; 538-547.

• Vitamin E helps prevent blood clots, angina

High blood levels of "plasminogen activator inhibitor" (PAI) indicate a greater than normal tendency toward blood clots, which can increase the risk of a heart attack. Japanese researchers treated 40 men and women with coronary spastic angina, characterized by heart spasms and chest pain. Half of the subjects received vitamin E (400 IU) or placebos daily for one month. Patients with coronary spastic angina had elevated PAI levels at the start of the study, but vitamin E reduced those levels to normal. In addition, patients taking vitamin E had fewer angina attacks.

Miyamoto S, et al. *Thrombosis Research*, 2004; 113:345-351.

• Moderate physical activity reduces risk of dementia

In a study of 2,257 elderly men, researchers at the University of Virginia reported that regular walking significantly reduced the risk of Alzheimer's disease and other types of dementia. Men who

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men lost muscle mass. In addition, the supplements helped preserve leg strength. Men not taking the amino acid supplements lost twice the leg strength of men taking the supplements.

Paddon-Jones wrote, "amino acid supplementation may offer an accessible, readily applicable, and effective means of reducing muscle loss to individuals with a compromised ability to move or exercise."

Reference: Paddon-Jones D, Sheffield-Moore M, Urban RJ, et al. Essential amino acid and carbohydrate supplementation ameliorates muscle protein loss in humans during 28 days bedrest. *Journal of Clinical Endocrinology*, 2004;89:4351-4358. □

walked less than a quarter mile daily were 80 percent more likely to develop dementia, and those who walked up to only 1 mile daily fared almost as poorly. The lowest risk of dementia was among men who walked at least two miles daily. Similarly, Harvard University researchers found that physically active elderly women were 20 percent less likely to experience serious declines in cognitive function.

Abbott RD, et al. *JAMA*, 2004;292:1447-1453; Weuve J, et al. *JAMA*, 2004;292:1454-1461.

• Lignans may reduce risk of breast cancer

Soy and clover have received considerable attention because of their content of isoflavones, mild estrogen-like substances. Lignans, another family of "phytoestrogens" may lower the risk of breast cancer in some women. Researchers at the Roswell Park Cancer Institute in Buffalo, N.Y., compared the diets of 1,122 women with breast cancer and 2,036 without the disease. Premenopausal women consuming the greatest amount of dietary lignans were 34 percent less likely to develop breast cancer. Lignans did not appear to influence the risk of cancer in postmenopausal women.

McCann SE, et al. *International Journal of Cancer*, 2004;111:440-443.

• Antioxidants turn off gene in prostate cancer

The "survivin" gene in some prostate cancer cells blocks a self-destruction process, called apoptosis, found in normal cells. Disabling this gene might enhance therapies against prostate cancer. In experiments with prostate cells, researchers at the University of Utah reported that vitamins E and C turned off the survivin gene and led to a significant reduction in growth. Vitamin E by itself was far more effective than vitamin C alone, but the two antioxidants together led to a 78 percent decline in prostate cell growth.

Gunawardena K, et al. *The Prostate*, 2004;59: 319-327.

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