Melasma is a dark pigmentation of the skin that occurs on sun-exposed areas of the face. It is particularly common in pregnant women and in women taking oral contraceptives or hormone-replacement therapy during menopause. Hydroquinone is a bleaching agent that is effective in some cases. Tretinoin cream, and in some cases topical steroids or chemical peels, are also used. The results of the present study suggest that topical ascorbic acid cream is a safe and effective alternative to conventional treatments. Although ascorbic acid cream was somewhat less effective than hydroquinone, it was better tolerated, and may therefore be considered as a first line therapy for patients wishing to try the safest treatments first.

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**...and vitamin C lowers uric acid levels...**

One hundred eighty-four nonsmoking volunteers (mean age, 58 years) were randomly assigned to receive, in double-blind fashion, one of the following for two months: 1) vitamin C 500 (mg/day), 2) vitamin E (RRR-alpha-tocopheryl acetate, 400 IU/day), 3) both supplements, or 4) placebo. The mean fasting serum uric acid concentration decreased (-0.5 mg/dl) in the vitamin C groups and increased (+0.09 mg/dl) in the no-vitamin-C groups (p < 0.0001 for the difference in the change between groups). Among the 21 participants with hyperuricemia (serum uric acid level greater than 7 mg/dl) at baseline who received vitamin C, the mean serum uric acid concentration decreased by 1.5 mg/dl (p = 0.0008). Vitamin E had no effect on serum uric acid concentrations.

**Comment:** Lowering serum uric acid levels is useful for the prevention and management of gout. As hyperuricemia is also an independent cardiovascular disease risk factor, reducing serum uric acid levels may be one of the many mechanisms whereby vitamin C enhances heart health. The results of the present study indicate that supplementation with 500 mg/day of vitamin C for two months produced a modest reduction in serum uric acid levels. Previous research suggested that this effect is due to an increase in urinary excretion of uric acid.

The uric acid-lowering effect of vitamin C was reported as early as 1976, but doses of 8 g/day were used and the supplementation period lasted only one week. The new study indicates that considerably smaller doses, when taken over a longer period of time, can also lower uric acid levels.


**...But doesn’t vitamin C cause kidney stones?**

Twenty-nine kidney stone formers (mean age, 49.8 years) and 19 non-stone formers (mean age, 50.8 years) received 1,000 mg of ascorbic acid twice a day (with the morning and evening meals) for six days, and no ascorbic acid (control period) for another six days, in random order. A low-oxalate diet was consumed throughout the study. On day six of each treatment period, the subjects received 136 mg of oxalate two hours before breakfast. Of the 48 participants, 19 (12 stone formers, 7 non-stone formers) were identified as responders, defined by an increase in 24-hour total oxalate excretion of greater than 10% after ascorbic acid treatment than after the control period. Responders had a greater 24-hour Tiselius Risk Index (a measure of calcium oxalate saturation) after ascorbic acid supplementation than after the control period (mean, 1.10 vs. 0.76), because of a 31% increase in the percentage of oxalate absorbed (10.5% vs. 8.0%) and a 39% increase in endogenous oxalate synthesis. The authors concluded that supplementation with 1,000 mg of ascorbic acid twice a day increased urinary oxalate excretion and the Tiselius risk index for calcium oxalate kidney stones in 40% of participants, both stone formers and non-stone formers.

**Comment:** Opponents of nutritional therapy have long claimed that vitamin C supplementation can cause kidney stones, even though there is virtually no evidence supporting that belief (see Arch Intern Med 1998;158:2187-2191). In fact, a large epidemiological study showed that the risk of kidney stone formation was 22% lower in men who consumed 1,500 mg/day or more of vitamin C, compared with the risk in men who consumed less than 250 mg/day. Although high-dose vitamin C may induce a small increase in urinary uric acid excretion in some people, and a larger increase in a very small proportion of the population, other effects of the vitamin might be expected to help prevent kidney stones. For example, increasing urinary ascorbic acid excretion may cause a small increase in urine acidity, which could reduce calcium oxalate precipitation. Vitamin C in the urine also binds calcium, thereby reducing the formation of calcium oxalate crystals.

While the new study appears to demonstrate that vitamin C increases kidney stone risk, its experimental design does not mimic real-life conditions. The participants in this study were given a fairly large amount of oxalate on an empty stomach, two hours before breakfast. Under normal circumstances, oxalate is a constituent of a meal, and the calcium present in that meal would bind a proportion of ingested oxalate and prevent it from being absorbed. Vitamin C may increase urinary oxalate in people dosed with pure...
Topical garlic extract heals warts and corns

Twenty-three patients with 2 to 96 warts (all on the hands except for two cases with plantar warts) and 9 patients with 1 to 2 corns on the feet applied a lipid extract of garlic twice a day until full or best recovery was seen. Complete recovery was seen in all cases with warts after 1 to 2 weeks of treatment. Seven of 9 patients with corns showed complete recovery after 10 to 20 days and the other 2 patients showed marked improvement, with no further improvement on continuation of treatment. In a control group of patients treated with the vehicle (chloroform:methanol:water), no improvement in warts was seen. In patients who had numerous warts, when only 1 or 2 large warts were treated, the other small warts located in the same area disappeared, too. Side effects included blistering, redness, burning, and hyperpigmentation of the skin around the application area, which usually disappeared completely in 1 to 2 weeks. Zinc oxide ointment was applied to the surrounding normal skin in all cases in an attempt to prevent side effects.

Comment: Although there is often a large placebo effect when warts are treated, the 100% cure rate within 2 weeks that was observed in this study seems far greater than one would expect from a placebo. The results with corns are also impressive. In an earlier study of 5 children with warts on the hands, nightly application of half a clove of garlic (with the cut side touching the skin) resulted in complete clearing of the lesions within 9 weeks. The results of the new study suggest that a lipid-soluble extract of garlic is more effective than either whole garlic or an aqueous extract. Because this treatment can cause blistering contact dermatitis, care should be taken to avoid applying the extract to normal skin. Covering the affected area with Band-Aids or waterproof tape after application of garlic, and washing the skin each morning, may help prevent the garlic from migrating to the surrounding skin.


Can DHEA help prevent diabetes?

Twenty-eight women (mean age, 50.2 years) with hypoadrenalism due to Addison's disease (71%) or bilateral adrenalectomy for Cushing's disease (29%) were randomly assigned to receive, in double-blind fashion, 50 mg/day of DHEA or placebo for 12 weeks. Compared with placebo, DHEA significantly increased insulin sensitivity, as determined using a hyperinsulinemic-euglycemic clamp (p < 0.05), and significantly decreased the mean fasting plasma insulin concentration (p = 0.005).

Comment: These results indicate that supplementation with 50 mg/day of DHEA for 12 weeks significantly increased insulin sensitivity in women with adrenal insufficiency. In an earlier study, administration of 50 mg/day of DHEA reduced abdominal fat and insulin resistance in elderly men and women (JAMA 2004;292:2243-2248). Observational studies have shown that the normal age-related decline in DHEA levels may play a role in the development of age-related insulin resistance. Taken together, these studies suggest that supplementation with physiological doses of DHEA would improve glucose metabolism in people with sub-optimal DHEA levels. However, DHEA treatment may not be advisable for everyone with insulin resistance, only those with evidence of DHEA deficiency. For example, many women with polycystic ovary syndrome have both insulin resistance and elevated blood levels of DHEA. I have found that the serum concentration of DHEA-sulfate is a reasonably good indicator of a person's DHEA status. Serum DHEA may be even more reliable, but DHEA is present in such small concentrations in the blood that the laboratory measurement may be prone to error.
