



# Literature Review and Commentary

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## Instant narcotic detoxification

A 35-year-old man addicted to morphine came to my office in the early stages of withdrawal, with sweating and extreme agitation. Over a period of five to ten minutes, he was given an intravenous infusion containing 3.5 g of vitamin C, 5 ml of 20% magnesium chloride hexahydrate, 2.5 ml of ten-percent calcium gluconate, 1,000 mcg of vitamin B12, 100 mg of pyridoxine, 250 mg of dexpanthenol (a form of pantothenic acid), and 1 ml of "B complex 100" (which provided 100 mg each of thiamine and niacinamide and smaller amounts of other B vitamins). In his agitated state, he was unable to sit still on the exam table, so we walked up and down the hall as I administered the treatment through a winged infusion set (butterfly needle) in his arm. Halfway through the injection, he was able to sit still, and by the end of the treatment, his withdrawal symptoms were gone. He did well for 36 hours, after which the withdrawal symptoms returned. At that time, the treatment was repeated and again relieved the symptoms within minutes. He returned the next day, still symptom-free, for a third injection, which carried him uneventfully through the remainder of the withdrawal period.

**Comment:** Addiction to narcotics has ruined countless lives and is a significant contributor to crime. Many addicts who would like to quit are unable to do so, because they cannot tolerate the withdrawal symptoms. The type of intensive nutritional therapy described above might help give these people a second chance. After the withdrawal period is over, ongoing nutritional therapy might help prevent a relapse. Such a program should include consuming adequate amounts of protein, stabilizing blood glucose levels, identifying and avoiding allergenic foods, and supplementing with B vitamins, vitamin C, magnesium, and trace minerals. A double-blind trial showed that supplementation with magnesium (as magnesium aspartate hydrochloride) at a dose of 732 mg/day reduced the use of illicit opiates by 51% in patients on a methadone maintenance program (*J Addict Dis.* 2003;22:49-61.)

Gaby AR. Intravenous nutrient therapy: The "Myers' cocktail." *Altern Med Rev.* 2002;7:389-403.

## Rapid recovery from "Ecstasy" poisoning

A 17-year-old male presented to an Emergency Department in a comatose state after taking three bottles of liquid "Ecstasy" (3,4-methylenedioxymethamphetamine; MDMA). A high level of amphetamine was found in the urine. He was given an intravenous infusion of 1 g of vitamin C in 200 ml of saline over a period of 30 minutes. Within 20 minutes (it was not stated whether this was 20 minutes from the start

or the end of the infusion), the patient was wide-awake and talking.

**Comment:** MDMA, commonly known as "Ecstasy," is a popular recreational drug that produces feelings of euphoria, love, openness, and heightened self-awareness. Overdoses of the drug can lead to hyperthermia, dehydration, rhabdomyolysis, acute renal failure, and death. As the elimination half-life of the drug ranges from three to seven hours, the rapid recovery in this case was most likely due to the administration of vitamin C. Acidification of the urine is said to increase the excretion of amphetamines by anywhere from two percent to 70%, and vitamin C treatment decreased the urine pH in this patient from 7.5 to 5.0. Nevertheless, the speed with which recovery occurred suggests that other mechanisms were also involved. Perhaps vitamin C competes with MDMA for binding sites in the brain or influences the metabolism of the various neurotransmitters (i.e., serotonin, dopamine, and norepinephrine) that are affected by MDMA. Studies in animals have shown that vitamin C reduces some of the toxic effects of MDMA.

Beyers CE. Rapid recovery from Ecstasy intoxication. *S Afr Med J.* 2001;91:708-709.

## Helping alcoholics to stop drinking

One hundred alcoholic patients, 60% of whom had failed one or more alcohol treatment programs, underwent a six-week outpatient program that combined biochemical interventions with rational-emotive therapy. Each patient had a six-hour glucose tolerance test and diet analysis. Food allergies were assessed by a four-day fast, followed by individual food challenges. Abnormal glucose metabolism was seen in 92% of the patients, and food allergy was found in 73%. The most common allergenic foods were wheat (58%), milk (50%), beef (22%), corn (22%), eggs (14%), and peanuts (14%). Of 80 patients tested, 70% had chemical sensitivities, 84% were sensitive to hydrocarbons (natural gas, gasoline, petroleum products), and 23% reacted to cigarettes.

Dietary changes included elimination of refined sugar, caffeine, nicotine, white flour, "junk foods," and reactive foods and chemicals. Allergies were treated by avoidance and use of desensitizing drops. Supplements included sodium ascorbate (initial dose, 4-5 g every three hours, modified according to response or bowel tolerance), evening primrose oil (Efamol, six capsules per day), and glutamine (1 g three times per day, or higher doses if cravings persisted). Additional vitamins, minerals, essential fatty acids, and amino acids were given when suggested by laboratory results. The dosages of various nutrients were reduced as the patients improved. Regular exercise was required, with a minimum of four 30-minute sessions per week. Nystatin was recommended when symptoms suggested candidiasis.

Eighty-five percent of the patients reported themselves as "abstinent and stable" at 12 and 42 months post-treatment. Symptoms typically seen in many abstinent alcoholics, including alcohol craving, depression, emotional lability, and confusion, were significantly reduced or eliminated during the first six weeks of treatment.

**Comment:** Most alcohol treatment programs have a high failure rate. The 85% success rate reported in this study is therefore noteworthy, especially considering the fact that 60% of the subjects had already failed one or more treatment programs. The successful program described above included a comprehensive approach to improving each person's metabolism, as well as a behavior-based form of psychotherapy. It is likely that many different components of the program contributed to the positive results. In my experience, alcohol craving can be reduced by many of the interventions used at this treatment center, including controlling hypoglycemia, avoiding allergens, supplementing with glutamine and vitamin B3, and treating suspected candidiasis with antifungal medication.

Mathews-Larson J, Parker RA. Alcoholism treatment with biochemical restoration as a major component. *Int J Biosocial Res.* 1987;9(1):92-106.

### Ascorbic acid aerosol for smoking cessation

Sixty-three smokers participating in a smoking cessation trial were divided into two groups. One group received clinical counseling alone, while the other group was given counseling plus a smoking substitute device. The cigarette substitute consisted of a cigarette-sized tube that delivered a fine aerosol of ascorbic acid (approximately 1 mg per puff, up to a maximum of 300 mg/day). The group using the device showed significantly greater abstinence from cigarettes after three weeks, compared with the group given counseling alone.

In a second study, two separate devices were compared. One delivered fine particles of ascorbic acid that were targeted to reach the trachea. The other device delivered coarser particles that were not expected to reach the trachea or lower airways. For those who were abstinent at the end of the trial, craving for cigarettes was significantly less in the group using the fine-particle device. Pulmonary function tests showed no evidence of bronchoconstriction from using the device.

**Comment:** This study demonstrated that using a smoking substitute device that delivers ascorbic acid can help people withdraw successfully from cigarettes. Some of the benefit from this device is no doubt attributable to the sensory cues it provides, which are similar to those provided by cigarettes. However, the ascorbic acid itself seems to have some activity, since the results were better when the aerosol was delivered to the respiratory tissue. This simple, apparently safe device should be given further consideration as an aid to smoking cessation.

Levin ED, et al. Clinical trials using ascorbic acid aerosol to aid smoking cessation. *Drug Alcohol Depend.* 1993;33:211-223.

### How much vitamin D is enough?

This review article summarized research that evaluated the relation between serum concentrations of 25-hydroxyvitamin D (25[OH]D) and bone mineral density, lower-extremity

function, dental health, and risk of falls, fractures, and colorectal cancer. For all endpoints, the most advantageous serum concentrations of 25(OH)D began at 75 nmol/L (30 ng/ml), and the best levels were between 90 and 100 nmol/L (36-40 ng/ml). In most people, these concentrations could not be reached with the currently recommended intakes of 200 and 600 IU vitamin D/day for younger and older adults, respectively. It appeared that, for bone health in younger adults and for all studied outcomes in older adults, an increase in the currently recommended intake of vitamin D is warranted. An intake for all adults of at least 1,000 IU/day is needed to bring vitamin D concentrations up to 75 nmol/L in at least 50% of the population.

**Comment:** A growing body of evidence indicates that adequate vitamin D status is needed to prevent osteoporosis, muscle weakness and pain, certain types of cancer, and other disorders. The RDA for vitamin D was originally set at 400 IU/day for children, based on nothing more than the fact that that amount is present in a teaspoon of cod liver oil, which had long been considered safe and effective for preventing rickets. The basis for adult recommendations was even less well defined (*Am J Clin Nutr.* 2004; 79:717-726).

Studies over the past ten years have shown that vitamin D deficiency is very common, approaching 40% in some populations. The results of this review suggest that significantly more vitamin D than the amount currently being recommended is needed to promote optimal health. The Food and Nutrition Board has established a safe upper limit of 2,000 IU/day for vitamin D intake. People who stay below that level are unlikely to experience any adverse effects in the long term. However, 2,000 IU/day of vitamin D could conceivably cause adverse effects in people who have substantial amounts of sunlight exposure.

Bischoff-Ferrari HA, et al. Estimation of optimal serum concentrations of 25-hydroxyvitamin D for multiple health outcomes. *Am J Clin Nutr.* 2006;84:18-28.

### Storing produce at room temperature

Three types of watermelon were stored at 5°C, 13°C, and 21°C for 14 days, and carotenoid content was compared with those of fruit not stored. Compared with fresh fruit, watermelons stored at 21°C had an increase in lycopene content of 11-40% and an increase in beta-carotene content of 50-139%. In contrast, fruit stored at 5°C had no increase, and fruit stored at 13°C had little increase in carotenoid content.

**Comment:** It is common knowledge that storing fruits, tomatoes, and some vegetables at room temperature makes them taste better than when they are stored in the refrigerator. The results of the present study indicate that storage of watermelons at room temperature enhances the biosynthesis of certain carotenoids. It is likely that many other biochemical reactions that promote healthfulness of fruits and vegetables also occur more rapidly at room temperature than at refrigerator temperature. The apparent beneficial effect of room temperature storage on taste and healthfulness should be balanced against the fact that produce stored at room temperature often spoils more rapidly.

Perkins-Veazie P, Collins JK. Carotenoid changes of intact watermelons after storage. *J Agric Food Chem.* 2006;54:5868-5874.