

## Are we ignoring effective substance abuse treatment solutions? Vitamin therapy as an essential treatment component.

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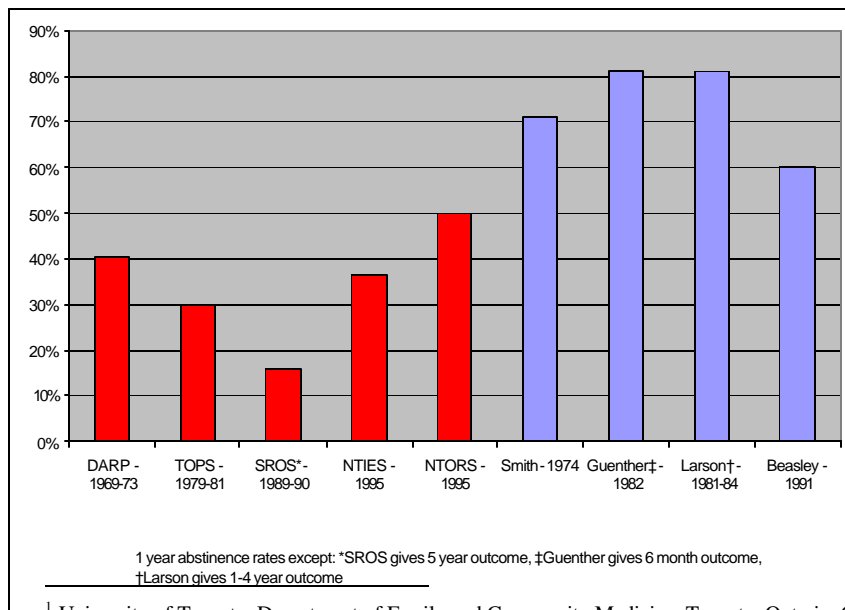
### Summary

An extensive search covering over 50 years of published literature provides consistent evidence that vitamin, mineral and amino acid therapy in drug withdrawal and rehabilitation can reduce withdrawal symptoms, increase treatment retention, improve psychological status, contribute to higher abstinence rates and improve quality of life. The typical program that includes a nutrient component has a social-educational focus and some are entirely drug free.

Published outcome studies of programs that include nutrient therapy report 55-81% long term sobriety rates. Safety studies indicate that adverse effects from short-term use of high-dose vitamin and/or amino acid therapy are rare, and occur at doses far higher than those seen in practical use.

Malnutrition among alcoholics is well documented and high doses of specific vitamins (above RDA values) are a standard accompaniment to alcohol withdrawal and treatment regimens. Malnutrition among abusers of illicit drugs is also well characterized however inclusion of nutrient therapy in these withdrawal and treatment settings is not as broad. This is most likely due to the emphasis of research funding on validating pharmaceutical paradigms. Nutrient therapy should receive much more research attention given the safety, cost-effectiveness and higher outcomes in those studies that have been published.

Long-term abstinence rates in large national outcome studies (red) vs. programs with high dose vitamin component (blue).



Reconsidering recovery goals

True recovery from addiction could be stated as abstinence without cravings and engagement in productive activities. Factors that improve retention, treatment completion, and increase time in treatment lead to better success.<sup>14</sup> These include factors that decrease withdrawal symptoms and cravings.<sup>18</sup> Where there are unmet nutrient requirements, whether determined by individual differences or from an unhealthy lifestyle, the body

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will crave that which it lacks or a similar substitute.

High doses of nutrients are needed to reverse depletion and provide therapeutic value

Each decade since 1970 has included a major national outcome study of substance abuse treatment in the U.S. In 1995 a large study was also published in England. Treatment results for programs that include a nutrient component are consistently higher than the national averages. In light of this large body of knowledge, it is shortsighted to rely solely on the use of additional or substitute drugs to abate withdrawal symptoms or manage cravings, a practice that can exacerbate the symptoms of underlying physical changes and create other dependencies.

Successful programs tend to use above-RDA intake, an approach that makes sense since Recommended Dietary Allowances are set to maintain good health. In diseased situations such as addiction, requirements are much higher to accomplish several treatment goals:

- a) address deficiencies from poor diet, impaired absorption, increased excretion, caused by drug use;
- b) repair altered neurotransmitter function caused by drug use;
- c) supply increased requirements needed to metabolize and eliminate drugs as a chronic toxic exposure;
- d) address unmet individually determined requirements

Nutrients commonly used in current treatment programs include niacin/niacinamide; B Complex vitamins especially B1, B5 and B6; antioxidants such as vitamin C and vitamin E; calcium and magnesium.<sup>20 9 13 10 19 2 8</sup> Each of these facilitate a large number of metabolic processes and their deficiencies can be associated with mental disturbances. Some programs support nervous system restoration by including amino acids as neurotransmitter precursors<sup>4 6</sup> and essential fatty acids<sup>12;17</sup>. Over half a century of research forms an important understanding of the rationale for nutrient inclusion in substance abuse treatment.

Safety studies indicate that adverse effects from short-term use of high dose vitamin, mineral and/or amino acid combinations, such as are used during withdrawal or rehabilitation, are negligible. With the exception of synthetic vitamin A, it is most likely that adverse events associated with high doses of a single vitamin are actually caused by resulting nutrient imbalances.

## Discussion

It is estimated that 21.6 million Americans suffered from substance dependence or abuse of drugs, alcohol or both yet only 1 in 5 persons actually obtaining help.<sup>24</sup> It is clear that simple and cost-effective solutions must be made available.

According to large scale studies, the average treatment programs obtains only a 25 percent abstinence rate over a year following treatment completion, the typical person entering treatment is entering for the third time, uses multiple substances, and has other health and social problems.<sup>23</sup> [Suggest taking out the last sentence, since you could argue that any change at all is a step forward. Probably stronger to just leave the stark reality.]

High treatment failure rates have caused some experts to conclude that addiction is an incurable disease. However, it is also possible that low success rates reflect the fact current approaches to rehabilitation are either seriously flawed or incomplete.

The number of addicted persons in the United States declined significantly between 1979 and 1992, from 23 million to 12 million. In the early 1990's, Congress established committees to encourage development of new medications for drug addiction. These launched industry incentives including tax breaks, extended patents on profit center medications, and strong promotional campaigns to encourage private sector activity in developing anti-addiction medications.<sup>7</sup>

Since this time, the number of current users has gradually increased and enormous sums of money are being invested in solving this problem.<sup>16</sup>

At the same time, massive drug promotion has added to the problem of addiction. An estimated 9 million people aged 12 and older used prescription drugs for nonmedical reasons in 1999<sup>11</sup>. An estimated 2.6 percent of the population aged 12 or older misuse prescription drugs, now the second most popular category of drug use after marijuana.

Ritalin, also known as methylphenidate, is on the Drug Enforcement Administration's (DEA's) Top 10 list of most often stolen prescription drugs. Methylphenidates use the same brain pathway as cocaine<sup>26</sup> and are listed as a schedule II drug meaning that they carry a high potential for abuse but have recognized medical use<sup>25</sup>.

A study at the University of California at Berkeley, which tracked 492 children for more than 25 years, found that use of Ritalin and other stimulants in the treatment of attention deficit hyperactivity disorder (ADHD) increases the likelihood of taking up smoking, cocaine, and other stimulants later in life.<sup>1</sup>

## Conclusion

The high cost of treatment, poor quality of life, and multitude of costly social problems associated with substance abuse can be addressed. There is sufficient evidence to include well-balanced regimens of numerous vitamins, minerals and amino acids as a standard component of treatment.

These approaches deserve greater attention from addiction researchers and rehabilitation specialists, particularly in view of the low success rates and serious social consequences associated with pharmaceutical responses to addiction.

## Reference List

1. Diagnosis and Treatment of Attention Deficit Hyperactivity Disorder. NIH Consensus Statement Online **16**, 1-37 (1998).
2. Beasley, J.D. *et al.* Follow-up of a cohort of alcoholic patients through 12 months of comprehensive biobehavioral treatment. *J Subst Abuse Treat* **8**, 133-42 (1991).
3. Bekelman, J.E., Li, Y., and Gross, C.P. Scope and impact of financial conflicts of interest in biomedical research: a systematic review. *JAMA* **289**, 454-65 (2003).
4. Blum, K. *et al.* Enkephalinase inhibition and precursor amino acid loading improves inpatient treatment of alcohol and polydrug abusers: double-blind placebo-controlled study of the nutritional adjunct SAAVE. *Alcohol* **5**, 481-93 (1988).
5. Brodkey, A.C. The role of the pharmaceutical industry in teaching psychopharmacology: a growing problem. *Acad Psychiatry* **29**, 222-9 (2005).

6. Brown, R.J., Blum, K., and Trachtenberg, M.C. Neurodynamics of relapse prevention: a neuronutrient approach to outpatient DUI offenders. *J Psychoactive Drugs* **22**, 173-87 (1990).
7. Committee to Study Medication Development and Research at the National Institute on Drug Abuse, I.o.M. Development of Medications for the Treatment of Opiate and Cocaine Addictions: Issues for the Government and Private Sector. The National Academies Press, Washington, DC (1995).
8. Evangelou, A. *et al.* Ascorbic acid (vitamin C) effects on withdrawal syndrome of heroin abusers. *In Vivo* **14**, 363-6 (2000).
9. Free, V. and Sanders, P. The use of ascorbic acid and mineral supplements in the detoxification of narcotic addicts. *J Psychedelic Drugs* **11**, 217-22 (1979).
10. Guenther, R.M. The role of nutritional therapy in alcoholism treatment. *Int Journal of Biosocial Research* **4**, 5-18 (1983).
11. Leshner, A. I. NIDA Research Report - Prescription Drugs: Abuse and Addiction. NIDA Research Report Series . National Clearinghouse on Alcohol and Drug Information.
12. Logan AC. Omega-3 fatty acids and major depression: a primer for the mental health professional. *Lipids Health Dis* **3**, (2004).
13. Mathews-Larson, J. and Parker, P.A. Alcoholism treatment with a biochemical restoration as a major component. *Int J Biosoc Res* **9**, 92-106 (1987).
14. Moos, R.H., King, M.J., Burnett, E.B., and Andrassy, J.M. Community residential program policies, services, and treatment orientations influence patients' participation in treatment. *J Subst Abuse* **9**, 171-87 (1997).
15. Murray, T.S. and Campbell, L.M. Finance, not learning needs, makes general practitioners attend courses: a database survey. *BMJ* **315**, 353 (1997).
16. Office of National Drug Control Policy. National Drug Control Policy 2001 Annual Report. 2002. Washington DC.
17. Peet, M. Nutrition and schizophrenia: beyond omega-3 fatty acids. *Prostaglandins Leukot Essent Fatty Acids* **70**, 417-22 (2004).
18. Prendergast, M.L., Podus, D., and Chang, E. Program factors and treatment outcomes in drug dependence treatment: an examination using meta-analysis. *Subst Use Misuse* **35**, 1931-65 (2000).
19. Replogle, W.H. and Eicke, F.J. Megavitamin Therapy in the Reduction of Anxiety and Depression Among Alcoholics. *J Orthomolec Medicine* **4**, 221-224 (1989).
20. Scher, J., Rice, H., Kim, S., DiCamelli, R., and O'Connor, H. Massive vitamin C as an adjunct in methadone maintenance and detoxification. *J Orthomolec Psych* **5**, 191-198 (1976).
21. Sierles, F.S. *et al.* Medical students' exposure to and attitudes about drug company interactions: a national survey. *JAMA* **294**, 1034-42 (2005).
22. Studdert D.M., Mello M.M., and Brennan T.A. Financial conflicts of interest in physicians' relationships with the pharmaceutical industry: Selfregulation in the shadow of federal prosecution. *New England Journal of Medicine* **351**, 1891-1900 (2004).
23. Substance Abuse and Mental Health Services Administration (SAMHSA). Services research outcome study (SROS). 98. Rockville, MD, Office of Applied Studies. Barbara Ray, Ph. D.
24. Substance Abuse and Mental Health Services Administration (SAMHSA). 2002 National Survey on Drug Use and Health. 2003.
25. US Drug Enforcement Administration. The Controlled Substances Act (CSA)  
     . Title II of the Comprehensive Drug Abuse Prevention and Control Act. 70.
26. Vastag, B. Pay attention: ritalin acts much like cocaine. *JAMA* **286**, 905-6 (2001).