

December 1998 Issue | Robert Lerman, M.D., Ph.D.

<http://jeffreybland.com/knowledgebase/december-1998-issue-robert-lerman-m-d-ph-d/>

[DOWNLOAD AUDIO](#) |

Welcome to the December, 1998 edition of *Functional Medicine Update*[™]. Our Clinician of the Month will be Dr. Robert Lerman, who will share information on mineral assessment, clinical nutrition related to trace elements, and updates on essential and nonessential dietary fats and their relationship to health risk factors.

The end of the year is a good time to look at the big picture of healthcare delivery, what it is trying to accomplish, and where we are going. This has been the objective of our five international symposia on functional medicine, and it will continue to be the focus at our Sixth International Symposium on Functional Medicine, to be held in May of 1999 in Tucson, Arizona.

Beyond the mechanistic discussions that often occur in *FMU* is the broader consideration of how we live, the nature of our relationships with one another, and how those factors influence our health.

A paper on this topic appeared recently in the *Journal of the American Medical Association*. Titled "Socioeconomic Factors, Health Behaviors, and Mortality,"¹ it provided an epiphany for me as I reread it. The first time I read it I had missed its significance, thinking it is well recognized that people of lower socioeconomic strata have poorer health behaviors, reduced life expectancy, and increased morbidity. In assuming that was a consequence of their health habits and patterns, I fell into the very bias this paper was designed to address. In rereading the paper in more detail, I found my own bias is shared by many of my colleagues about why we get ill and the role of class or socioeconomic strata in illness patterns.

This fascinating study was done at the Survey Research Center, the School of Public Health, and the Department of Sociology at the University of Michigan at Ann Arbor. The protocol was to do a longitudinal survey of the impact of education, income, and health behaviors on the risk of dying within the next seven and a half years. This was a nationally representative sample of 3,617 adult women and men who participated in this Americans' Changing Lives Survey. All-cause mortality was verified through the National Death Index and death certificate reviews.

Clinician of the Month:

Robert Lerman, M.D., Ph.D.

JB: This month's Clinician of the Month, Dr. Robert Lerman, is a clinical professor of medicine at the Boston University School of Medicine. He is also Director of Inpatient Nutrition at Boston Medical

Center. He has a wide range of educational and experiential certifications, including a PhD in nutritional biochemistry from M.I.T. and board certification in internal medicine. His MD/PhD degrees have served him well as his career has progressed over the last 20 years, as will become evident during our discussion.

Dr. Lerman has taken a sabbatical from his appointment in Boston and joined the Functional Medicine Research Center as a visiting scholar. He will spend the 1998/1999 academic year with us. He brings his considerable expertise to the things we are doing in the clinical management research area with syndrome X, obesity management, and general nutrition.

JB: I want to share part of a letter from Bob's friends on the East Coast, who were sorry about his decision to go to what they seem to feel is a cultural wasteland here in the Pacific Northwest.

"Thanks for letting us know where you are, though why anyone would want to spend the winter in Gig Harbor, Washington, rather than in Boston is something we will probably never understand. Oh, how we anticipate those brisk northeasters blowing in from the broad Atlantic, which keep our brains hyper-alert and our noses glued to the grindstone. No wonder most medical advances come from this side of the continent, and not from the more temperate zone in which you currently slumber. Science has proven that cold shifts blood away from the feet and towards the cranium, while just the opposite is true where there is damp fog, but no ice."

We will ensure that Dr. Lerman doesn't *slumber*. We hope to keep him adequately stimulated, provoked, and encouraged as he spends his sabbatical year here.

JB: Bob, I would like to begin our discussion with one area that is of contemporary interest, and that is trace element clinical nutrition. Many people who manage patients recognize that trace minerals are an important part of the armamentarium of nutrients, but they don't fully understand the clinical signs of insufficiency or how to assess mineral status. I'd like to go back in your career to the early 1980s when you had a very interesting case that you ultimately described in a paper in the *American Journal of Clinical Nutrition*. It concerned the association of selenium deficiency with total parenteral nutrition. Would you tell us how you came to understand selenium's role in health, and how that led you into an understanding of trace minerals?

RL: Thank you very much, Jeff. First, I want to say that it is a real pleasure to be here in Gig Harbor, and I expect there will be tremendous stimulation during the year. I already feel this, as well as the great energy of the Functional Medicine Research Center.

Back in the early 1980s when I was first involved with total parenteral nutrition, I had a patient who had been injured at close range by a gunshot wound, leading him to multiple surgical procedures ending up with intestinal enterocutaneous fistulae. This patient initially led me into the area of trace elements when I attended a conference at the American Society of Parenteral and Enteral Nutrition. I learned about zinc deficiency and the fact that zinc is lost in large amounts in diarrheal fluid and fistula output. In thinking

about my patient, I realized that we were giving this young man, age 16, the usual daily requirement of zinc for total parenteral nutrition, which at that time was about 2.5 mg a day.

We subsequently did some balance studies on him, measuring the output of zinc from his fistulae fluid and found that the amount of zinc we needed to provide for him was more in the range of 15 to 20 mg per day, rather than the 2.5 mg. We then supplemented him with this amount of zinc.

Bibliography

- The *alpha*-tocopherol, *beta* carotene cancer prevention study group, Heinonen O, Albanes D. The effect of vitamin E and *beta* carotene on the incidence of lung cancer and other cancers in male smokers. *NEJM*. 1994;330(15):1029-1035.
2. Lantz PM, House JS, Lepkowski JM, Williams DR, Mero RP, Chen J. Socioeconomic factors, health behaviors, and mortality. *JAMA*. 1998;279(21):1703-1708.
3. Leo MA, Aleynik SI, Aleynik MK, Lieber CS. β -Carotene beadlets potentiate hepatotoxicity of alcohol. *Am J Clin Nutr*. 1997;66:1461-1469.
4. Tanaka M, Gong JS, Zhang J, Yoneda M, Yagi K. Mitochondrial genotype associated with longevity. *Lancet*. 1998;351:185-186.
5. Rowbottom DG, Keast D, Green S, Kakulas B, Morton AR. The case history of an elite ultra-endurance cyclist who developed chronic fatigue syndrome. *Med Sci Sports Exercise*. 1998;30(9):1345-1348.
6. Fouty B, Frerman F, Reves R. Riboflavin to treat nucleoside analogue-induced lactic acidosis. *Lancet*. 1998;352:291-292.
7. Schoenen J, Jacquy J, Lenaerts M. Effectiveness of high-dose riboflavin in migraine prophylaxis. A randomized controlled trial. *Neurol*. 1998;50:466-470.
8. van Asselt DZ, de Groot L, van Staveren WA, et al. Role of cobalamin intake and atrophic gastritis in mild cobalamin deficiency in older Dutch subjects. *Am J Clin Nutr*. 1998;68(2):328-334.
9. Russell RM. Mild cobalamin deficiency in older Dutch subjects. *Am J Clin Nutr*. 1998;68(2):222-223.
10. Fenech M, Aitken C, Rinaldi J. Folate, vitamin B12, homocysteine status and DNA damage in young Australian adults. *Carcinogenesis*. 1998;19(7):1163-1171.
11. Nugent A, Hadden DR, Carson NA. Long-term survival of homocystinuria: the first case. *Lancet*. 1998;352(9128):624-625.

12. Lonsdale D, Christensen RL. The clinical effects of transmethylation defects: report of two cases. *J Advancement Med.* 1998;11(1):35-46.
13. Taubes G. The (political) science of salt. *Science.* 1998;281(5379):898-906.
14. Chan TY, Chan AY, Lau JT, Critchley JA. Sodium and potassium intakes and blood pressure in Chinese adults in Hong Kong: a comparison with southern China. *Asia Pacific J Clin Nutr.* 1998;7(1):33-36.
15. McCarron DA, Metz JA, Hatton DC. Mineral intake and blood pressure in African Americans. *Am J Clin Nutr.* 1998;68(3):517-518.
16. Lau KH. Daily oral magnesium supplementation suppresses bone turnover in young adult males. *J Clin Endocrinol Metab.* 1998;83(30545):2742-2748.
17. Shankar AH, Prasad AS. Zinc and immune function: the biological basis of altered resistance to infection. *Am J Clin Nutr.* 1998;68(suppl):447S-463S.
18. Sandstead HH, Penland JG, Alcick NW, et al. Effects of repletion with zinc and other micronutrients on neuropsychologic performance and growth of Chinese children. *Am J Clin Nutr.* 1998;68(suppl 2S):470S-475S.
19. Toren P, Eldar S, Sela BA, et al. Zinc deficiency in attention-deficit hyperactivity disorder. *Biol Psychiatry.* 1996;40:1308-1310.
20. Uauy R, Olivares M, Gonzalez M. Essentiality of copper in humans. *Am J Clin Nutr.* 1998;67(suppl):9522S-959S.
21. Mahaffey KR. Methylmercury exposure and neurotoxicity. *JAMA.* 1998;280(8):737-738.
22. Beigel Y, Ostfeld I, Schoenfeld N. A leading question. *N Engl J Med.* 1998;339(12):827-830.
23. Mann FD. Animal fat and cholesterol may have helped primitive man evolve a large brain. *Perspect Biol Med.* 1998;41(3):417-425.
24. Weverling-Rijnsburger AW, Blauw GJ, Lagaay AM, Knook DL, Meinders AE, Westendorp RG. Total cholesterol and risk of mortality in the oldest old. *Lancet.* 1997;350:1119-1123.
25. Palomaki A, Malminiemi K, Solakivi T, Malminiemi O. Ubiquinone supplementation during lovastatin treatment: effect on LDL oxidation ex vivo. *J Lipid Res.* 1998;39:1430-1437.
26. Ornish D. Serum lipids after a low-fat diet. *JAMA.* 1998;279(17):1345.
27. Nelson GJ. Dietary fat, trans fatty acids, and risk of coronary heart disease. *Nutr Rev.* 1998;56(8):250-252.

28. Balu R. Trans fat: taste buds cry 'Yes!' but arteries demur. *Wall St J*. June 8 1998:B1.
29. Lee C, Barnett J, Reaven PD. Liposomes enriched in oleic acid are less susceptible to oxidation and have less proinflammatory activity when exposed to oxidizing conditions. *J Lipid Res*. 1998;39(6):1239-1247.
30. Calder PC. Dietary fatty acids and the immune system. *Nutr Rev*. 1998;56(1):S70-S83.
31. Sessler AM, Ntambi JM. Polyunsaturated fatty acid regulation of gene expression. *J Nutr*. 1998;128(6):923-926.
32. Singh J, Hamid R, Reddy BS. Dietary fish oil inhibits the expression of farnesyl protein transferase and colon tumor development in rodents. *Carcinogenesis*. 1998;19(6):986-989.
33. Xi S, Cohen D, Chen LH. Effects of fish oil on cytokines and immune functions of mice with murine AIDS. *J Lipid Res*. 1998;39(8):1677-1687.
34. Stenson WF, Cort D, Rodgers J, et al. Dietary supplementation with fish oil in ulcerative colitis. *Ann Internal Med*. 1992;116:609-614p>