May 1997 Issue | Ronald Glasser, M.D.

http://jeffreybland.com/knowledgebase/may-1997-issue-ronald-glasser-m-d/

DOWNLOAD AUDIO |

Welcome to *Functional Medicine Update* for May 1997. On side 1 of this month's tape, we will deal with new aspects of viral illnesses and their control and review a series of new clinical perspectives on antioxidants. On side 2, we will include a Clinical Focus on insulin insensitivity and discuss some new thoughts on weight management.

Welcome to *Functional Medicine Update*™ for May, 1999. It is a privilege to be with you, act as spokesman for colleagues around the world, and share insights into the evolution of health. I sometimes have a feeling of great responsibility about the accuracy, clarity, and excitement in the research, clinical discoveries, and breakthroughs. I hope that tone comes through in this month's issue of *FMU*.

I often get letters, and I thank those subscribers who communicate your desires, likes, and dislikes about *Functional Medicine Update*™. I recently received two interesting letters from individuals who have been successful in the process of functional, healthy aging. Both are retired physicians I have known for many years. Their comments are noteworthy relative to making life transitions. The first letter is from Dr. Bayard Coggeshall (February 1999), a retired pediatrician and a long-standing *FMU* subscriber. He writes:

"As a pediatrician now living in a retirement community and witnessing results of the aging process, cause and effect deserve reflection. It influences my counseling efforts in a community clinic in Dover, New Jersey from the pediatric viewpoint.

"A journey of 41 years in pediatric practice followed by participation as a volunteer in the Dover (NJ) Community Clinic involved a gradual change in both focus and conviction. Following, a few markers, or events, are mentioned which for me illuminated the way.

INTERVIEW TRANSCRIPT

Ronald Glasser, M.D.

JB: Dr. Taylor, I welcome you to *Functional Medicine Update* as an individual whose background is in central nervous system drug design work and, over the past eight years, in AIDS research. How did you get involved in this work, moving from your training and background as a drug designer in pharmacokinetics, pharmacodynamics, and computational pharmacology into the exciting work with

selenium and AIDS?

WT: That's a big question. I appreciate being here, and I enjoy the opportunity to get some of this information out to an informed audience. My background, as you said, was in CNS pharmacology. I became interested in why molecules work, why some drugs work effectively against certain receptors, and so on. Those skills appeared to be needed in terms of some of the AIDS drug development, and I started working on AZT-like compounds, nucleoside analogs, asking why some are effective inhibitors of the virus and many are not. That work ultimately led me into the field of computational biology, in which we try to predict what proteins are encoded in certain genomes and what kind of functions and particular structure they have. I started looking at drug resistance in antiviral nucleosides and the possible relationship of the RNA structure of HIV to sites of mutation in the viral genome. That process led me to make some fairly significant and interesting discoveries.

In essence, we discovered some structures called RNA pseudoknots in the RNA of the virus. That, in itself, was of interest. Where these pseudoknots were located was interesting; but because pseudoknots can be involved in a process called frameshifting, in which new genetic regions can be opened up for translation into protein, we had to ask if this could relate to some new protein coding potential in HIV.

Part of that story was that we found these regions had been ignored in the past because there were stop-codons in this region, or several regions. People had thought that anything up there would be junk. It turns out that stop-codons don't always mean stop, and one of the stop-codons also encodes selenocysteine, an amino acid that incorporates selenium. So there we have the basis, in a nutshell, of discovering a possible selenium link with HIV.

BIBLIOGRAPHY

1. Allavena C, Dousset B, May T, Dubois F, Canton P, Belleville F. Relationship of trace element, immunological markers, and HIV1 infection progression. *Biol Trace Elem Res.* 1995;47:133-138.
2. Barinaga M. Obesity: leptin receptor weighs in. *Science.* 1996;271:29.
3. Bland JS. New advances in weight management. *Clin Nutr Insights.* 1996;5(1):1-4.
4. Blundell JE, Halford JC. Pharmacological aspects of obesity treatment: towards the 21st century. *Int J Obesity.* 1995;19(Suppl 3):S51-S55.
5. Brown KM, Morrice PC, Duthie GG. Erythrocyte vitamin E and plasma ascorbate concentrations in relation to erythrocyte peroxidation in smokers and nonsmokers: dose response to vitamin E supplementation. *Am J Clin Nutr.* 1997;65:496-502.
6. Cohen B, Novick D, Rubinstein M. Modulation of insulin activities by leptin. *Science.*1996;274:1185-1188.
7. Dagogo-Jack S, Fanelli C, Paramore D, Brothers J, Landt M. Plasma leptin and insulin relationships in obese and nonobese humans. *Diabetes.* 1996;45:695-698.
8. Do intestinal hyperpermeability and the related food antigens play a role in the progression of IgA nephropathy? *Am J Nephrol.* 1996;16:500-505.
9. Dunstan RH, Donohoe M, Taylor W, et al. A preliminary investigation of chlorinated hydrocarbons and chronic fatigue syndrome. *Med J Aust.* 1995;163:294-297.
10. Dworkin BM. Selenium deficiency in HIV infection and the acquired immunodeficiency syndrome (AIDS). *Chem-Biol Interactions.* 1994;91:181-186.

11. Eckel RH. Insulin resistance in atherosclerosis. *Am J Clin Nutr.* 1997;65:164-165.
12. First international symposium on human viral diseases: selenium, antioxidants and other emerging strategies of therapy and prevention. April 19-21, 1996. Nonnweiler, Germany. *Int Antiviral News.* 1996;4(5):84-86.
13. Haley RW, Hom J, Roland PS, et al. Evaluation of neurologic function in Gulf War veterans. *JAMA.* 1997;277(3):223-230.
14. Haley RW, Kurt TL, Hom J. Is there a Gulf War Syndrome? *JAMA.* 1997;277(3):215-222.
15. Haley RW, Kurt TL. Self-reported exposure to neurotoxic chemical combinations in the Gulf War. *JAMA.* 1997;177(3):231-237.
16. Harris WS, Rambør GS, Windsor SL, Diederich D. n-3 fatty acids and urinary excretion of nitric oxide metabolities in humans. *Am J Clin Nutr.* 1997;65:459-464.
17. Hutchesson A, Preece MA, Gray G, Green A. Measurements of lactate in cerebrospinal fluid in investigation of inherited metabolic disease. *Clin Chem.* 1997;43(1):158-161.
18. Iowa Persian Gulf Study Group. Self-reported illness and health status among Gulf War veterans. *JAMA.* 1997;277(3):238-245.
19. Itzhaki RF, Lin WR, Shang D, Wilcock GK, Faragher B, Jamieson GA. Herpes simplex virus type 1 in brain and risk of Alzheimer's disease. *Lancet.* 1997;349:241-244.
20. Jousilahti P, Tuomilehto J, Vartiainen E, Valle, Nissinen A. Body mass index, blood pressure, diabetes and the risk of anti-hypertensive drug treatment: 12-year follow-up of middle-aged people in eastern Finland. *J Human Hypertension.* 1995;9:847-854.
21. Kerr RA. What is leptin for, and does it act on the brain? *Nature Med.* 1996;2(5):492-493.
22. Kolaczynski JW, Nyce MR, Considine RV, et al. Acute and chronic effect of insulin on leptin production in humans. *Diabetes.* 1996;45:699-701.
23. Kullen MJ, Amann MM, O'Shaughnessy MJ, O'Sullivan DJ, Busta FF, Brady LJ. Differentiation of ingested and endogenous bifidobacteria by DNA fingerprinting demonstrates the survival of an unmodified strain in the gastrointestinal tract of humans. *J Nutr.* 1997;127:89-94.
24. Landrigan PJ. Illness in Gulf War veterans. *JAMA.* 1997;277(3):259-261.
25. Lasmèzas CI, Deslys JP, Robain O, et al. Transmission of the BSE agent to mice in the absence of detectable abnormal prion protein. *Science.* 1997;275:402-405.
26. Liebman B. The selenium surprise. *Nutr Action Healthlett.* 1997;24(1):8-9.
27. Look MP, Rockstroh JK, Rao GS, Spengler U, Sauerbruch T. Serum selenium and erythrocyte glutathione peroxidase in human immunodeficiency virus-1 infection. *Biol Trace Elem Res.* 1996. In press.
28. McGregor GP, Desaga JF, Ehlenz K, et al. Radioimmunological measurement of leptin in plasma of obese and diabetic human subjects. *Endocrinol.* 1996;137(4):1501-1504.
29. Mills C. The deadliest virus. *Sciences.* 1997;37(1):34-38.
30. Passwater RA. Vitamin connection. More exciting research from Dr. Will Taylor. Selenium against viruses. *Whole Foods.* 1996;19(11):71-80.
31. Pelto L, Salminen SJ, Isolauri E. *Lactobacillus GG* modulates milk-induced immune inflammatory response in milk-hypersensitive adults. *Nutr Today Suppl.*1996;31(6):45S-46S.
32. Perseghin G, Price TB, Petersen KF, et al. Increased glucose transport-phosphorylation and muscle glycogen synthesis after exercise training in insulin-resistant subjects. *N Engl J Med.* 1996;335(18):1357-1362.
33. Peuhkuri K, Lähteenmäki T, Sievi E, Saxelin M, Vapaatalo H, Korpela R. Antioxidative properties of *Lactobacillus GG* measured as prostacyclin and nitric oxide production in endothelial cell culture. *Nutr Today Suppl.* 1996;31(6):39S-40S.

34. Priemè H, Loft S, Nyyssönen K, Salonen JT, Poulsen HE. No effect of supplementation with vitamin E, ascorbic acid, or coenzyme Q10 on oxidative DNA damage estimated by 8-oxo-7,8-dihydro-2'-deoxyguanosine excretion in smokers. *Am J Clin Nutr.* 1997;65:503-507.
35. Ravussin E, Pratley RE, Maffei M, et al. Relatively low plasma leptin concentrations precede weight gain in Pima Indians. *Nature Med.* 1997;3(2):238-240.
36. Rohner-Jeanrenaud F, Jeanrenaud B. Obesity, leptin and the brain. *N Engl J Med.*1996;334(5):324-325.
37. Schwartz MW, Peskind E, Raskind M, Boyko EJ, Porte D. Cerebrospinal fluid leptin levels: relationship to plasma levels and to adiposity in humans. *Nature Med.*1996;2(5):589-593.
38. Stewart M. Will glycosylated haemoglobin replace the oral glucose-tolerance test? *Lancet.* 1997;349:223-224.
39. Stunkard AJ. Current views on obesity. *Am J Med.* 1996;100:230-236.
40. Taylor EW, Bhat A, Nadimpalli RG, Zhang W, Kececioglu J. HIV-1 encodes a sequence overlapping env gp41 with highly significant similarity to selenium-dependent glutathione peroxidases. *J AIDS Hum Retrovirol.* In press.
41. Taylor EW, Nadimpalli RG, Ramanathan CS. Genomic structures of viral agents in relation to the biosynthesis of selenoproteins. *Biol Trace Elem Res.* Symposium Volume. Schrauzer G, Montagnier L, eds. In press.
42. Taylor SI, Barr V, Reitman M. Does leptin contribute to diabetes caused by obesity? *Science.* 1996;274:1151-1152.
43. Taylor W. Selenium and viral diseases: facts and hypotheses. Computational Center for Molecular Structure and Design. Dept. of Medicinal Chemistry. Univ. of Georgia

p>