IRCS (Research on: Metabolism and Nutrition; Social and Occupational Medicine) 2, 1379 (1974)

HUMAN VITAMIN C REQUIREMENT: RELATION OF DAILY INTAKE TO INCIDENCE OF CLINICAL SIGNS AND SYMPTOMS

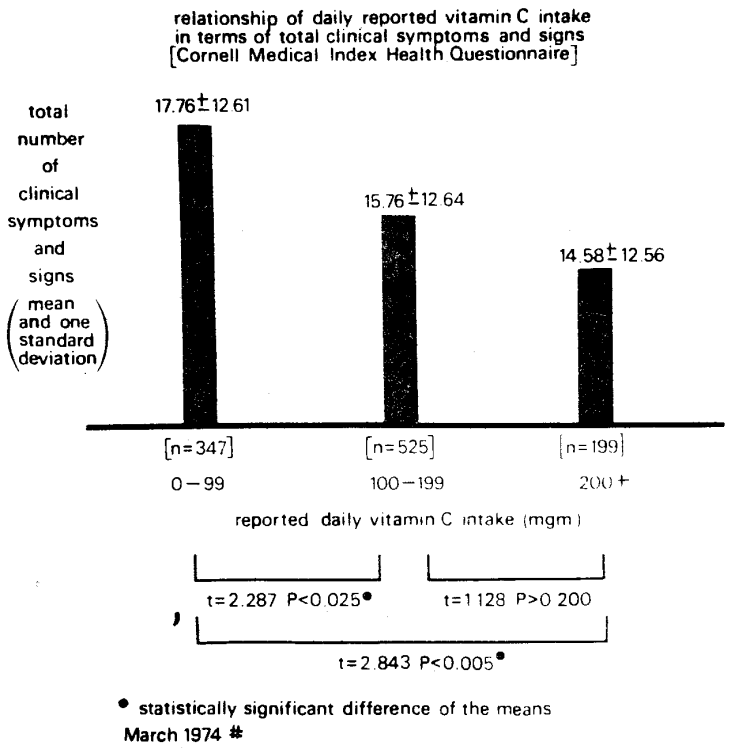
E. Cheraskin and W.M. Ringsdorf,

Department of Oral Medicine, University of Alabama in Birmingham, Birmingham, Alabama 35294, U.S.A.

Paper received: 6th May, 1974.

There is no denying the heated debate generated by Professor Linus Pauling with the appearance of his paper on orthomolecular psychiatry (1), followed by his book, *Vitamin C and the Common Cold* (2), and his most recent release, *Orthomolecular Psychiatry* (3). One of the controversies stemming from his work is the dosage of vitamin C which should be consumed under health and disease conditions.

Interestingly enough, just a matter of a few weeks ago, the Food and Nutrition Board of the National Academy of Sciences-National Research Council (4) suggested that the daily vitamin C requirement be reduced from 60 mg to 45 mg per day.



We here attempt to cast additional light on the daily vitamin C requirement through a study of the reported daily vitamin C intake versus the reported total number of clinical symptoms and sigms in a presumably healthy group of doctors and their wives.

Each subject completed the Cornell Medical Index Health Questionnaire and the total number of positive responses was noted. Each subject also completed a seven-day dietary survey and the number of milligrams of vitamin C consumed each day was calculated.

The 1071 observations were divided into three groups based on reported daily vitamin C intake. The 347 subjects consuming less than 100 mg of vitamin C daily showed a total clinical score of 17.76 ± 12.61. In contrast, the 525 subjects consuming 100 to 199 mg per day revealed a total clinical score of 15.76 ± 12.64. The difference is statistically significant ($t = 2.287$, $P < 0.025$). The 199 subjects consuming 200+ mg of vitamin C per day showed a clinical score of 14.58 ± 12.56 which was not statistically significantly different from the group consuming 100 to 199 mg per day ($t = 1.128$, $P > 0.200$). However, the group consuming the least and the group consuming the greatest amount of vitamin C were very significant ($t = 2.843$, $P < 0.005$).

If one grants that the lower the clinical score (the fewer the number of symptoms and signs) the healthier the group, then it is obvious that those consuming 200+ mg of vitamin C per day represent the healthiest group. This means then that the daily vitamin C intake is approximately four or more fold greater than that recommended by the Food and Nutrition Board of the National Academy of Sciences-National Research Council.

1. Pauling, L. (1968) *Science*, **160**, 265
2. Pauling, L. (1970) *Vitamin C and the common cold.* W.H. Freeman and Company, San Francisco
3. Hawkins, D. and Pauling, L. (1973) *Orthomolecular psychiatry; treatment of schizophrenia.* W.H. Freeman and Company, San Francisco
4. Food and Nutrition Board, National Academy of Sciences-National Research Council (1973) *Recommended daily dietary allowances.* (Revised)