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From: Artemis P Simopoulos, MD [cgnh@bellatlantic.net]

Sent: Wednesday, 12 June 2002 21:57

To: dietandhealth@who.int

Subject: Comments Re: Draft Report of the Joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of

Date: June 12, 2002

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Re: Draft Report of the Joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases (Geneva, 28 January - 1 February 2002)

From:

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4. The Center for Genetics, Nutrition and Health's activities are international, national and regional.
5. The Center for Genetics, Nutrition and Health is an educational, non-profit, non-governmental organization, whose purpose is to provide unbiased and clear interpretation of current scientific knowledge for professionals and the public in genetics, nutrition and fitness, and health, through national and international committees, conferences and workshops, the proceedings of which are published in the scientific literature.
6. See point 5.
7. Sources of funding: foundations, national and international government, industry, conference fees, and private individuals.
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Comments:

I. Page 6, last paragraph, lines 8-13 which read:

"All the analyses indicate that, out of the three main risk factors (smoking, high blood pressure, raised plasma cholesterol), diet rather than smoking, operating through the dietary effect on plasma cholesterol and blood pressure levels accounted for the larger part of this substantial decline in cardiovascular disease. The contribution made by medication to the decline (antilipid and hypotensive drugs) was very small."

I think it is only fair to note that the incidence of apolipoprotein E4 (ApoE4) in the Finnish population is 23 - 24%. ApoE is associated with higher cholesterol levels, so the prevailing situation in Finland is:

1. A high saturated fat/high cholesterol diet; and
2. a high prevalence to genetic predisposition towards higher cholesterol levels;
3. leading to increased death rate from cardiovascular disease.

There is also a recent study in the Journal of the American Medical Association (JAMA), which supports the fact that alpha-linolenic acid from canola oil in the intervention diet potentiated the cholesterol lowering effect of simvastatin. The authors concluded, "A modified Mediterranean-type diet rich in omega-3 fatty acids efficiently potentiated the cholesterol-lowering effect of simvastatin, counteracted the fasting insulin-elevating effect of simvastatin, and, unlike simvastatin, did not decrease serum levels of beta-carotene and ubiquinol-10."

Reference: Jula A, marniemi J, Huupponen R, et al. Effects of diet and

simvastatin on serum lipids, insulin, and antioxidants in hypercholesterolemic men. A randomized controlled trial. JAMA 2002;287:598-605.

II. Page 16, last paragraph, lines 5-8 which read:

"However the early diet was presumably one which gave evolutionary advantage to reproduction in the early part of life, and so may be less indicative of guidance for healthy eating, in terms of life-long health and chronic disease prevention after reproduction has been achieved."

There is no evidence for this hypothesis. Furthermore, this report emphasizes the importance of maternal health and birth weight as influencing the development of chronic diseases, so this statement is against the main thrust of the report.

III. Page 17, paragraph 1, which reads:

"Most of the NCDs that are addressed in this report are polygenic in nature and thus not susceptible to being identified by single gene screening, moreover the epidemic is not due to changes in genetic susceptibility but rather caused by environmental change."

This statement is wrong for the following reasons.

1. Although coronary heart disease is multigenic and multifactorial, familial hypercholesterolemia, dyslipidemia, and familial hypertriglyceridemia account for 20% of cases of elevated cholesterol, run in families, and can be genetically screened.
2. As many people have indicated, the mutation rate is very low, which means that our genes have not changed significantly. It is the interaction of the genetic profile with changes in environmental factors (smoking, physical activity, diet, environmental pollutants, etc.) that

leads to disease manifestation in those susceptible.

Therefore, these three lines (paragraph 1) as stated do not do justice to the scientific evidence.

IV. Page 17, under "3.4 Intervening throughout life", bullet 2 which reads:

"the biological risk factors of hypertension, obesity and lipidaemia are firmly established as risk factors for CHD, stroke and diabetes;"

In the DASH study, those who responded the most by lowering their blood pressure were those who had the AA genotype. The DASH study concluded, "ANG genotype is associated with BP response to the DASH diet. The AA genotype confers excess risk of hypertension and is associated with increased responsiveness to diet."

Reference: Svetkey LP, Moore TJ, Simons-Mortorf DG, et al. Angiotensinogen genotype and blood pressure response in the Dietary Approaches to Stop Hypertension (DASH) study. J Hypertens 2001;19:1949-1956.

V. Page 20, paragraph 2, lines 6-9 which read:

"However, it would be of no concern if a large proportion of values were outside the defined goals. Sometimes there is no lower limit. This implies that there is no evidence that the nutrient is required in the diet and hence low intakes should not give rise to concern."

This is not quite correct. Only essential nutrients have a lower limit.

VI. Page 32, Table 6, column 2, "Decreased risk"

The recent meta-analysis by Feldman in the Journal of Nutrition concluded that walnuts decrease the risk for cardiovascular disease, so there is convincing evidence to add walnuts under the "Convincing" evidence category and leave the other nuts where they are under "Probable" evidence category.

Reference: Feldman EB. The scientific evidence for a beneficial health relationship between walnuts and coronary heart disease. J Nutr 2002;132:1062S-1101S.

VII. Page 54, item 6.5, paragraph 2 which reads:

"Prevention has been shown to work. In the wealthier countries, mortality from cardiovascular disease dropped dramatically at the close of the twentieth century. In communities, districts and nations in which widespread, integrated interventions have taken place, dramatic decreases in risk factors have occurred. This has happened in countries as diverse as China, Finland, France, Norway, Singapore and the United States. If each person adopted healthy patterns of living, up to 80% of diabetes and over 50% of coronary heart disease could be prevented. Preventing chronic disease can be done effectively throughout the life course, but environments must be modified to allow healthy living"

There is no evidence that the incidence of coronary heart disease has decreased in the U.S., only mortality from coronary heart disease has decreased, probably the result of improved medical care.

References:

Rosamond WD, Chambless LE, Folsom AR, et al. Trends in the incidence of myocardial infarction and in mortality due to coronary heart disease, 1987 to 1994. N Engl J Med 1998;339:861-7.

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Levy D, Thom TJ. Death rates from coronary disease - progress and a puzzling paradox. N Engl J Med 1998;339:915-917.