

South African Dietary Guidelines

To the Editor: We were surprised to read¹ that the South African Food-Based Dietary Guidelines² have been approved and adopted as national dietary guidelines despite the international consensus to move away from the paradigm that 'Carbohydrates are good' and 'Fat is bad'. Nutritionists have long known that some types of fat are essential to health and can reduce the risk of cardiovascular disease. Furthermore, scientists have found little evidence that a high intake of carbohydrates is beneficial. In short, not all fats are bad for you, and by no means are all complex carbohydrates are good for you.

The well-intended South African guidelines make the following misleading sweeping statements:

1. Make starchy foods the **basis of most meals**.
2. Chicken, fish, meat, milk or eggs can be **eaten daily!**
3. **Eat fats sparingly.**

This is 'good' news for the 'Beer, Braai, Chevrole' community in South Africa! They will love the recommendations for daily intake of meat! This will increase intake of the invisible saturated animal fats, with all the negative health consequences of a diet rich in saturated fats. The guidelines will fuel the rising epidemic of insulin-resistant disorders in our country with the resultant increase of adult-onset diabetes mellitus and associated cardiovascular disease. These chronic and degenerative diseases of lifestyle are mostly incurable, and very expensive to treat. Lifestyle modification, including a healthy diet, smoking cessation, weight control and exercise, is the only rational alternative to prevent this rising epidemic.

There is clear laboratory, clinical and epidemiological evidence that all starches are not good, and that all fats are not bad. A high intake of refined carbohydrates can wreak havoc as far as the body's glucose and insulin levels are concerned. Replacing these carbohydrates with healthy fats — monounsaturated or polyunsaturated — actually lowers one's risk of heart disease. Nutritionists of the US Department of Agriculture's Center for Nutrition Policy and Promotion are now proposing a new food pyramid to replace the grossly flawed USDA 1992 Food Guide Pyramid. The consumption of healthy fats and whole-grain foods is encouraged, and avoiding refined carbohydrates, butter and red meat is recommended.

The Lyon Diet Heart Study comparing a modified diet of Crete with a prudent typical Western diet not very different from the US National Cholesterol Education Program (NCEP) step I, resulted in a 50 - 70% reduction in the risk of recurrence after a first myocardial infarction. The cardioprotective experimental modified diet of Crete is a low saturated and polyunsaturated fat, non-strict vegetarian diet rich in oleic acid, omega-3 fatty acids, fibre, B group vitamins and various antioxidants. The emphasis is on low glycaemic index carbohydrates with limitation of refined

starches, and a low intake of saturated fat and omega-6 polyunsaturated fat with an increased intake of monounsaturated and omega-3 polyunsaturated fat.

Plasma and cell membrane omega-6/omega-3 fatty acid ratios are among the main biological effects of the experimental modified diet of Crete tested in the Lyon trial. The discovery that there is competition between linoleic acid (omega-6 fatty acid), the precursor of arachidonic acid (AA), and alpha-linolenic acid (omega-3 fatty acid), the precursor of eicosapentaenoic acid (EPA), explains the cardioprotective effects of these eicosanoids. The prostaglandins, thromboxanes and leucotrienes derived from EPA have different biological properties from those derived from AA. Omega-6 fatty acids increase the tendency to inflammation, thrombus and tumour formation. When the omega-6/omega-3 ratios decrease, as a result of dietary changes, EPA competes with AA for eicosanoid metabolism at the cyclo-oxygenase and lipo-oxygenase levels in platelets and leucocytes. As a result, the balance between metabolites stimulating platelets and leucocytes (and also vasoconstrictive properties) and metabolites with opposing properties is displaced towards those with antithrombotic, anti-inflammatory and vasodilatory properties.

The results of the Lyon Diet Heart Study lead to the conclusion that plasma and cell membrane phospholipid omega-6 and omega-3 fatty acid ratios are among the main biological effects of the experimental modified diet of Crete tested in this trial. Results also show that a pattern based on a modified diet of Crete decreases the death rate from both coronary heart disease and cancer. It appears that in terms of the essential fatty acid and antioxidant content, the diet of Crete is similar to the Paleolithic diet on which humans evolved.

The publication of the Lyon Diet Heart Study convincingly demonstrated that the prudent diet as recommended by the USDA is a totally unacceptable means of preventing cardiovascular disease compared with the modified Mediterranean diet. In fact, the ethical committee recommended that the trial be terminated because of the overwhelming evidence after only 24 months that the Mediterranean diet demonstrated a 70% reduction in cardiac events in this secondary prevention trial.

The South African Dietary Guidelines closely resemble the old American Food Guide Pyramid. Fortunately the Americans acknowledged their ignorance, and the new American Food Guide Pyramid will be officially published next year. It is important that the South African public should also receive the correct guidelines in concert with internationally accepted dietary recommendations. We believe that the proposed and accepted guidelines will not promote a cardioprotective dietary pattern combining high intake of natural antioxidants, low intake of saturated fatty acids, high intake of oleic acid, low intake of omega-6 fatty acids and high intake of omega-3 fatty acids.

The South African Dietary Guidelines must incorporate and reflect the latest laboratory, clinical and epidemiological findings in simple and understandable recommendations in order to prevent

the epidemic of diet-related disorders of insulin resistance in our highly atherogenic phenotype population.

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1. Love P. 'Approved!' South African Dietary Guidelines. *S Afr J Clin Nutr* 2003; 16(2): 70.
2. South African Food-Based Dietary Guidelines: Technical Support Papers. *S Afr J Clin Nutr* 2001; 14(3): suppl, S1-S80.

Professor H H Vorster comments on behalf of the Food-Based Dietary Guidelines Working Group: The above comments on the 'new' South African Food-Based Dietary Guidelines (FBDG) are welcomed because they give the FBDG Working Group an opportunity to emphasise and explain a number of issues and also to put others in context of the holistic aims of these guidelines.

Van Velden and Mansvelt state that three of the guidelines make 'sweeping statements', namely those regarding starchy foods, animal protein foods and fats. They then proceed to discuss the beneficial effects of the Crete diet and of some fatty acids, antioxidants and the W3/W6 fatty acid ratio, as well as the detrimental effects of saturated fats and refined carbohydrates.

Regarding the 'sweeping statements', it should be mentioned that based on FAO/WHO recommendations,¹ the FBDG were developed to consist of simple, easy understandable messages. These messages should be 'user-friendly', positive, and based on existing eating patterns and food production in a country. They also should be sustainable, leading to diets that are acceptable and affordable and will address public health problems. In South Africa, this means dietary recommendations that will address both under- and overnutrition.² Furthermore, the technical papers explaining and supporting each guideline² repeatedly emphasise the importance of educating different target groups in using the guidelines to make appropriate food choices. Many (if not all) the points raised by Van Velden and Mansvelt are actually discussed in detail in these supporting papers. A few of these will receive some attention here.

1. 'Daily intake of meat'. Instead of being 'good news' for the 'Beer, Braai-leis and Chevrolet' community, the technical support

paper³ explains in detail how animal foods can be used to address many of the prevalent micronutrient problems in South Africa and that the recommended amounts (400 - 500 ml milk per day, 2 - 3 servings of fish per week, about 4 eggs per week and not more than 560 g meat per week) will improve nutritional status without increasing risk of non-communicable diseases.

2. 'Refined carbohydrate'. The technical support paper⁴ explains how the guideline regarding starchy foods is based on existing eating patterns of the majority of the population and how to ensure optimal nutrition by choosing carbohydrate foods with low glycaemic effects, rich in dietary fibre and micronutrients (unprocessed or minimally processed forms).

3. 'Modified diet of Crete'. The basic nutritional characteristics of this diet propagated by Van Velden and Mansvelt, rich in plant foods, fish, antioxidants, and monounsaturated fats with ideal ratios of W3/W6 fatty acids, are all embodied in the guidelines on vegetable and fruit intake,⁵ legumes⁶ and fats,⁷ with the difference that the focus is on locally produced and acceptable foods. The technical support paper of the fat guideline⁷ explains in detail the physiological effects of the different fatty acids and motivates for and gives advice on the choice of low-fat products.

In conclusion, food-based dietary guidelines are developed to influence dietary choices towards 'healthier' diets associated with optimal nutritional status and low risk for diet-related disease, compatible with what is available, affordable and acceptable.

The difference in approach lies not in our interpretation of the science and knowledge regarding the relationships between diet and health, but in our decisions which messages will motivate the South African public towards sustainable 'healthier' diets. The FBDG working group has acknowledged the need for developing appropriate marketing strategies, and that the guidelines should be adapted at least every 5 years, based on experiences of nutritionists in implementing the guidelines, and availability of new knowledge.

1. FAO/WHO Consultation. *Preparation and Use of Food-Based Dietary Guidelines* (Nutrition Programme WHO/NUT 96:6). Geneva: World Health Organisation, 1996: 1-9.
2. Vorster HH, Love P, Browne C. Development of food-based dietary guidelines for South Africa — the process. *S Afr J Clin Nutr* 2001; 14 (3): suppl, S3-S6.
3. Scholtz SC, Vorster HH (jun), Matshego L, Vorster HH. Foods from animals can be eaten every day — not a conundrum!. *S Afr J Clin Nutr* 2001; 14 (3): suppl, S39-S47.
4. Vorster HH, Nell TA. Make starchy foods the basis of most meals. *S Afr J Clin Nutr* 2001; 14 (3): suppl, S17-S24.
5. Love P, Sayed N. Eat plenty of vegetables and fruits every day. *S Afr J Clin Nutr* 2001; 14 (3): suppl, S24-S32.
6. Venter CS, Van Eyssen E. More legumes for better overall health. *S Afr J Clin Nutr* 2001; 14 (3): suppl, S32-S38.
7. Wolmarans P, Oosthuizen W. Eat fats sparingly — implications for health and disease. *S Afr J Clin Nutr* 2001; 14 (3): suppl, S48-S55.