

THE INTERRELATIONSHIP BETWEEN FAT AND CARBOHYDRATE INTAKE IN THE FREE-LIVING POPULATION

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Increasing knowledge about the relationship between diet and chronic disease etiology has led to the development of dietary guidelines in many countries including Australia. These guidelines are primarily concerned with setting a framework for the adoption of a diet which is optional in relation to the health profile of the community. One of the major themes of the guidelines has been a set of recommendations to reduce the percentage of energy contributed by fat and refined sugars and to increase that from complex carbohydrate.

In recent years, several large scale population surveys in Australia have increased our knowledge of the mean intakes of various foods and nutrients in our population, of the range of intake and of certain demographic determinants of intake. However, there is still little information about current patterns of intake in the community. For instance, we know little of the overall nutrient profile of individuals at the upper end of the range for fat or refined sugar intake or, conversely, the lower end of complex carbohydrate intake.

A study of the food and nutrient intakes of some 3,000 Victorians selected randomly from the electoral role whose dietary intakes have been previously described (Baghurst et al. 1988), showed a number of interesting relationships between the intake of the various carbohydrate and fat components of the diet and between these and total energy in the diet. The relationships were investigated by regression analysis using the percentage energy derived from the various fats and carbohydrates as the dependent variable.

Total energy in the diet was positively associated with % energy derived from fat and negatively with that derived from naturally occurring sugars. A relationship between energy and refined sugar consumption was apparent only at the lower end of the intake range. Above 8% of energy from refined sugars there was no relationship to total dietary energy.

The energy derived from fat in the diet was strongly ($R = -0.97$) and negatively associated with % energy from simple carbohydrates. The relationship was nearly as strong for naturally occurring sugars but weaker for refined sugars.

The relationship of dietary fat to complex carbohydrate was not linear but parabolic with both the very low and very high fat consumers having low relative complex carbohydrate intakes. At the lower end of fat intake range this reflected diets high in fruits, fruit juices and certain vegetables but relatively low in cereals and at the upper end, diets relatively high in meats and dairy products.

Current dietary guidelines seek to increase the relative intake of complex carbohydrate in the community whilst, decreasing that of dietary fat. The data from this 'free-living' community would suggest that those in the population currently consuming low fat diets are, in general, consuming diets high in the simple carbohydrates not, as recommended, the complex carbohydrates. This data highlights problems that may arise if intervention strategies use single message themes such as "Reduce Fat".

BAGHURST, K.I., CRAWFORD, D., WORSLEY, A., SYRETTE, J.A., RECORD, S.J. and BAGHURST, P.A. (1988). Comm. Hlth. Stud. XII: 42.