

DIETARY FATS IN HEALTH

NORMAN J. TEMPLE

Department of Foods and Nutrition, Faculty of Home Economics, The University of Alberta, Edmonton, Canada T6G 2M8

This review examines the relationship between dietary fat intake and health. Meat produced by modern farming methods has a high fat content in comparison with its natural counterpart and, furthermore, the fat is low in polyunsaturated fat. The combined result of this and dairy food is that our modern diet has far more fat than was consumed by stone-age man. A number of diseases are associated with the Western lifestyle and thus might be caused by a high fat intake. With regard to coronary heart disease, there is a better correlation with refined carbohydrates than with dietary fat. Prospective and case-control studies also indicate that dietary fat is of secondary importance. Human and animal studies show that a diet high in fat is a major factor in cancer of the breast and, to a lesser extent, in cancer of the colon. For obesity and diabetes there is contradictory evidence for the involvement of dietary fat. A high fat diet reportedly has a deleterious effect on the immune system, therefore possibly constitutes a factor in autoimmune disease.

INTRODUCTION

During the vast majority of human evolution man was a hunter-gatherer. The advent of agriculture some 8 000-10 000 years ago is too recent for any significant degree of further evolution. It is reasonable to presume, therefore, that modern man is adapted to the diet of his stone-age forebear. This diet contained much plant material (1) which, no doubt, was rich in fiber and therefore resembles modern fruit, vegetables and unrefined cereals. In addition, much meat was eaten from wild animals (2-4).

It is often assumed that all meat is similar and that man is therefore well adapted to a diet rich in saturated fats. Crawford *et al.* (5,6) compared meat from herbivorous mammals in Uganda with typical butcher's shop meat purchased in London. Whereas the Ugandan meat had a fat content of 2-5%, in London the figure is around 20-40% (before removal of visible fat). Other data for mammalian meat sold in Britain indicates a typical fat content of 16-31% (5-11% in major organs) (7). By comparison Ethiopian meat has been reported to contain only 1.3% fat (8) (ie even less than Ugandan meat). In addition to these quantitative differences the fat of African meat is much more rich in polyunsaturated fatty acids (PUFA): 30% in Ugandan wild meat (5,6), while the reported value for London meat is only 2-4% (5,6) or 4.5% (9-15% in major organs) (9). It is apparent therefore that modern farming methods have greatly increased the fat content of meat and that this fat has a low ratio of PUFA to saturated fat (P/S).

