

MODEL SYSTEM FOR INTEGRATION OF DATA ON FOOD
CONSUMPTION AND HEALTH STATUS

Jean A.T. Pennington, Ph.D., R.D.
Food and Drug Administration

The Food and Drug Administration is heavily dependent on food consumption data for making decisions on regulatory initiatives which involve maintaining or improving the nutritional quality of the food supply. These decisions may have direct impact on the maintenance of public health. Unfortunately, the associations between food consumption (dietary status) and health status, as measured clinically and/or biochemically, are not well defined. Neither is the role of diet in the etiology of chronic disease or the effects of chronic disease on nutritional status clearly elucidated. A computerized model system to integrate and correlate dietary status data with health status data is proposed. Establishment of such a system will allow FDA's nutrition related regulatory policies to be based on proved relationships. The system may also serve as the basis for nutrition intervention programs to improve health status.

The model system to link food consumption and health status data is still in the planning stages. It is visualized as a computer-assisted centralized repository to summarize information from established data bases and from other research studies. It is to be on-going, allowing for the addition or deletion of data at any point. Once established, the system will allow: up to date correlations of food intake and health status; some predictions of health status based on food intake and other modifying factors; evaluation of additive risk factors; predictions of trends and patterns in food consumption; and the testing of specific hypotheses in retrospective or perspective fashion.

A major task in developing the system will be collection and evaluation of the data base and the incorporation of the data into the system. Data will be required on: food composition; food consumption; broad range health status measures (demographic data); specific health status measures (clinical, biochemical and anthropometrical data); and modifying factors such as age, sex, activity levels, socio-economic background, use of alcohol, tobacco, and other drugs, etc. that may affect health. To be developed currently, the system must be compatible with existing information sources. Guidelines for future studies on food consumption and health status must be developed so that results from these studies will be accurate and appropriate and incorporate easily into the system.

Three phases of the system, perhaps overlapping phases, are foreseen. The first involves the collection, evaluation and integration of data from broad range data bases. The second phase concerns the collection, evaluation and integration of data from specific research studies. The data from the broad range and specific studies should include, whenever possible, information on modifying factors. The third phase involves the collection, evaluation and integration of data on longitudinal studies, preferably studies where food consumption and health status are followed for an individual's life. This last line of information is extremely valuable for predicting trends and patterns in food intake and allowing for the elucidation of diet-health relationships with long latency periods.