

THE TOTAL DIET STUDY AND LANGUAL

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The Food and Drug Administration's (FDA) Total Diet Study monitors the levels of contaminants and nutritional elements in the United States (US) food supply.¹ In the current program, which has been in place since April, 1982, 234 foods are purchased four times per year and analyzed individually for over 200 pesticide residues, several industrial chemicals, toxic elements, and radionuclides, and 11 nutritional elements. Daily intakes of these substances are then estimated for eight age-sex groups. Results for the intakes of nutritional elements for 1982 to 1986 were published in the May issue of the *Journal of the American Dietetic Association*.² These results indicate that six nutritional elements are low (less than 80% of the Recommended Dietary Allowance or below the lower end of the Estimated Safe and Adequate Daily Dietary Intake (ESADDI)) for three or more of the age-sex groups. The diets of teenage girls and adult women were low in calcium, magnesium, iron, zinc, copper, and manganese. The diets of older women were low in calcium, magnesium, zinc, and copper. The diets of teenage boys and older men were low in copper. Sodium was within the ESADDI range for all but young children and teenage boys; however, the diets evaluated did not reflect the inclusion of discretionary salt, although recipe items included salt specified by recipes and many commercial items were salted. Iodine was elevated for all age-sex groups, but iodine intakes decreased during the four-year study period. The decline in iodine was mainly due to the decreased iodine content of ready-to-eat breakfast cereals. That decrease was likely caused by a decline in the use of the red dye erythrosine (FD & C Red No. 3) by cereal manufactures. Nutritional intakes for 1987 through 1989 are under evaluation and results appear to be similar to those for 1982 to 1984.

The diets of the Total Diet Study are under revision, based on food consumption information from the 1987-88 Nationwide Food Consumption Survey (NFCS). Approximately 260 foods from the over 5,000 foods in the NFCS database will be selected to represent the US food supply. This is an increase over the 234 foods of the current program. The additional foods will reflect more ethnic dishes and mixed dishes. The number of age-sex groups represented in the Total Diet Study will increase from 8 to 14. In addition to the groups currently covered, the program will include 6-year-old children, 10-year-old children, 40-45 year-old women, 40-45 year-old men, women 70 years of age and older, and men 70 years of age and older.

This past year, a small study was conducted to compare the levels of nine nutritional elements in the diets of the eight age-sex groups as determined by Total Diet Study analysis and by calculation using data in the USDA Database for Standard Reference.³ Results for the two methods were quite similar after corrections had been made for missing values in the USDA database. Average percent differences between the 2 methods of determining daily intakes for the 9 elements ranged for -2.6 to 11.0 for the eight age-sex groups.

Languag

Languag (previously known as the Factored Food Vocabulary) is an indexing language which has been developed and supported by the FDA Center for Food Safety and Applied Nutrition.⁴ The purpose of Languag is to allow for the indexing of food characteristics that affect safety and/or nutritional values; to support the retrieval needs of users having different points of view; to facilitate the comparison of linkage of data between various data files; and to allow new descriptors to be included when needed for new food characteristics. The characteristics of foods that are currently captured by the system include product type; food source; part of plant or animal; physical state, shape, or form; extent of heat treatment; cooking method; treatment applied; preservation method; packing medium; container or wrapping; food contact surface; and user group/dietary use. Information about Languag has been presented at the last four National Nutrient Databank Conferences. A presentation tomorrow afternoon will again highlight the retrieval capabilities of Languag and indicate current innovations of the system.

Over the past several years, FDA has provided assistance in applying the Languag factors to foods in the food composition databases used by the National Cancer Institute (NCI), the National Food Agency of Denmark, and the Centre Informatique sur la Qualite des Aliments (CIQUAL) in France. The factor terms with definitions and scope notes have been translated into French, Danish, and adapted to British English. Because of this interest in Languag from sources outside FDA, it was deemed appropriate to establish an organizational structure to represent the interests and needs of users and to facilitate communication among users. The organizational structure consists of a steering committee with one member each from FDA, NCI, and CIQUAL, and two separate, but equal, executive components, one in North America and one in Europe. Each executive component will have a developmental working group and a computer/telecommunications working group. In North America these working groups are organized and in action; in Europe, they have not yet been established.

The North American developmental working group consists (as it has for the past 14 years) of classification experts, nutritionists, food technologists, and systems specialists. Currently the committee has eight members (five FDA persons and three non-FDA persons). Although the European counterpart to this group has not formed, certain key individuals have been identified from France, Denmark, and the United Kingdom. We communicate periodically with these persons and have had several opportunities to meet together for discussions. The European contacts also receive our newsletters and meeting agendas and can send their comments regarding items under discussion. Recent discussions have focused on differences in food regulations among countries and how these differences affect food descriptions (e.g., the percent of alcohol in alcoholic beverages or the percent of butter fat in dairy products).

The North American computer/telecommunications working group consists of two members (one from FDA and one from NCI) who are developing an inventory of hardware and software to be used by Languag and to establish the methods and facilities for message communication among members. Thus, Languag is in the initial stages of becoming an international food description system. We anticipate that it will allow for increased communication and exchange of food-related data among agencies and organizations within the US and in other countries.

REFERENCES

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