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DIETS OF THE ELDERLY

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Introduction

The increasing proportion of our population surviving to older ages and the variety of chronic diseases associated with the elderly have brought current attention to the nutritional status of this group. There are many dimensions to the nutrition-aging problem. Physical, behavioral, and socioeconomic constraints may limit food habits and practices. The elderly utilize a variety of medications; some of these alter appetite and nutrient metabolism. This group may be especially vulnerable to beneficial claims for nutrient supplements - including levels of intake well beyond the RDA's. The potential role for nutrition in maintaining optimal health and function, in retarding the rate of progression of major age-related chronic diseases, and even in modifying some of the age changes in body composition and organ system function - all present major research problems. In addition, there is interest in the several nutrition programs aimed at elderly groups: are they addressing the most important needs and are they effective?

In contrast to younger segments of the American public, we still have rather limited information on the nutritional status of the elderly, particularly of those over age 75 years. Older groups have not been included in the major national nutrition and health surveys based upon population sampling. Thus, existing data derives from more limited regional studies, studies of self-selected individuals. And only two of the recent studies have included a comprehensive biochemical evaluation of nutrient status which can be related to estimates of nutrient intake derived from food diaries (1,2).

There is a further problem in the interpretation of the traditional nutrition surveillance procedures: present standards for the evaluation of dietary, biochemical, and anthropometric measurements are derived largely from much younger population groups. It seems very unlikely that generalizations such as RDA's for "51 years and older", current desirable body weights, or currently used nutrient biochemical ranges will ultimately be appropriate for such a broad age range. Among the reasons are the inherent increases in biological variation, in heterogeneity of health status, and in diversity of environmental stresses which characterize old age.

Present knowledge of the nutritional status of the elderly

In the Boston area, the USDA Human Nutrition Research Center has completed an extensive nutritional status survey of approximately 1,000 elderly volunteer subjects aged 60-98 years. This presentation will address some of the major findings in the 700 noninstitutionalized subjects who were "healthy" in the sense that they had no known terminal or wasting disease process.

Dietary assessment utilized three-day food intake records obtained with the instructional and review assistance of a dietitian. The nutrient data bank at the University of Massachusetts was used for energy and nutrient analyses. As we have recently reported (1), energy intakes declined over this age range among males (from 2,000 Cal/day to 1800 Cal/day) but are constant at about 1500 Cal/day in females. As a proportion of total energy, proteins provided about 17% and fats 34% of calories; the balance, 48 to 49%, was provided by carbohydrates. In this group, as in the study of Garry, et al (2) of New Mexican retirees, protein intake appeared to be adequate (3). Using less than two-thirds of the RDA as a quite arbitrary cut-off point for identifying a "low" nutrient intake, we observed substantial proportions of our population whose three-day average consumption of the following nutrients was "low": vitamins D, B_6, B_{12}, and folic acid; the minerals calcium and zinc. For all except calcium, we believe that the proportions are overestimates. Among the reasons are : underestimates of food intake using diaries in elderly groups; the lack of complete food table data for the vitamins mentioned and for zinc; inappropriate elderly RDA's for some nutrients. Even though dietary supplements were used regularly by up to half the population in this study, the estimates of "low" intakes were very little changed for these particular nutrients when we considered total intake (diet + supplement). As yet unpublished data shows little or no biochemical evidence for any nutrient deficiencies in this population; nor was there clinical or hematologic evidence of deficiency. Calcium, on the other hand, is another matter. About 20% of these elderly males, and up to 38% of the females, consumed less than two-thirds of the RDA for calcium. Thus the low intakes previously observed in middle-aged U.S. populations become even lower among the elderly. As is well known, this may be one factor in age-related bone loss (osteoporosis) in our population.

As is so well documented in middle-aged adults, obesity is an important risk factor in both morbidity and mortality from a variety of chronic diseases. The health consequences of obesity among the elderly are less clear. But in terms of prevalence, obesity remains a very frequent condition among elderly females of all ages (30 to 40% of the population in the Boston study). Among males, on the other hand, the prevalence of obesity declined from 35% in those under age 80 years to only 13% among the older subjects.

Other Factors influencing dietary quality

As noted in all previous dietary or nutrition surveys of adults in the U.S., we have also reported that the intakes of protein and of many micronutrients were significantly reduced in sub-population groups characterized by lower income and by lower educational attainment. In addition, the wearing of dentures (particularly among males) was associated

with significant reductions in dietary quality.

Conclusion

The many dimensions of the nutrition-aging problem present important areas for future basic and applied research. Even in terms of nutrition status, it appears likely that nutritional surveillance of more representative segments of our elderly population will indeed demonstrate a variety of specific problem areas. It is imperative that older age groups be included in future health and nutrition studies.

References

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