



Older Americans Act

National Policy and Resource Center
on Nutrition and Aging



**Dietary Reference Intakes and Dietary Guidelines
in Older Americans Act Nutrition Programs
An Issue Panel Report**

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**ISSUE PANEL REPORT: DIETARY REFERENCE INTAKES AND DIETARY
GUIDELINES IN OLDER AMERICANS ACT NUTRITION PROGRAMS**

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Prepared by Cogent Research

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Prepared by the National Policy and Resource Center
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PART 1
SUMMARY OF THE ISSUE PANEL
HELD ON FEBRUARY 11TH, 2002



**DIETARY REFERENCE INTAKES
AND DIETARY GUIDELINES
IN OLDER AMERICANS ACT NUTRITION PROGRAMS**

**PART 1: SUMMARY OF THE ISSUE PANEL
HELD ON FEBRUARY 11TH, 2002**

Conducted for:

National Policy and Resource Center on Nutrition and Aging

Florida International University

Miami, FL

Conducted by:

Cogent Research

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PANEL ON DIETARY REFERENCE INTAKES AND DIETARY GUIDELINES
IN OLDER AMERICANS ACT NUTRITION PROGRAMS

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INTRODUCTION

This report summarizes discussion and recommendations of the Issue Panel on Dietary Reference Intakes and Dietary Guidelines in Older Americans Act Nutrition Program (Nutrition Program). The National Policy and Resource Center on Nutrition and Aging (Center) convened the Issue Panel on February 11, 2002 in Baltimore, Maryland. Cogent Research staff assisted in the design of the meeting and served as facilitators. Panelists included nutrition and aging researchers; individuals involved in policy development; federal, state, and local program administrators; and food industry representatives.

Congress re-authorized the Older Americans Act (OAA) in 2000 for five years. The OAA requires that Nutrition Programs meet the *Dietary Guidelines for Americans* published by the Secretaries of Health and Human Services and Agriculture, and the *Recommended Dietary Allowances* (RDAs) established by the Food and Nutrition Board, Institute of Medicine, National Academy of Sciences (NAS), but does not specify using the most recent versions. However, the National Nutrition Monitoring and Related Research Act of 1990 (Public Law 101-445) requires that the Secretaries of Health and Human Services and Agriculture contract with a scientific body, such as the NAS, to publish reports on nutrient requirements and status of the United States on a two to five year basis, as well as develop Dietary Guidelines every five years. The law requires that all federal food, nutrition, and health programs promote these requirements. Thus, the Dietary Reference Intakes (DRIs) and Dietary Guidelines (DGs) serve as the cornerstone for federal nutrition policy.

It is understood that any new standards supercede previous ones. Specifying a date/version for these standards in the OAA is not necessary. New versions include new information. For example, the DRIs (which include RDAs) have gender-specific reference values for two “Life Stage Groups” – ages 51 to 70 and >70 years – whereas the 1989 RDAs only had gender-specific reference values for a single age category, 51+ years.

Likewise, the 2000 DGs differ from past versions. Several Guidelines were reworded, and their order of importance was changed to reflect emerging science and public health issues. For example, the Guideline on fat now emphasizes the need to reduce consumption of saturated fat and also recognizes the role of trans fatty acids in hypercholesterolemia. In addition, new Guidelines, such as the one on food safety, were added in recognition of new concerns. Unlike the DRIs, the DGs are not quantitative. They provide general direction on how to include nutrient components in dietary intake to promote health, eg, “make low-fat choices.”

There may be some confusion among nutritionists and administrators within the aging network regarding which nutrient standards (and which new values, if there are differences in age groups and/or gender) should be used in Nutrition Program implementation. Some Nutrition Programs have begun using the DRIs and 2000 DGs when planning menus and also when designing, implementing, and assessing other nutrition services, but many have not.

Thus, the purpose of the Issue Panel was to discuss the rationale for and the use of the DRIs and *2000 DGs* when providing OAA nutrition services, including nutrition education, nutrition counseling, and congregate and home-delivered meals. Panelists had focused discussions on six topics regarding nutrition recommendations for the Administration on Aging (AoA). This report includes a summary of the discussion and the recommendations. Discussion built toward consensus whenever possible. However, given limited time, there were some issues that panelists were not able to resolve. In those cases, this summary presents the various perspectives of the panelists.

Discussion Topics:

1. Why must Older Americans Act Nutrition Program meals meet the most current Recommended Dietary Allowances and Adequate Intakes (as components of the Dietary Reference Intakes), and the *2000 Dietary Guidelines for Americans*?
2. Must each Older Americans Act Nutrition Program meal *individually* meet these requirements?
3. Assuming that all Older Americans Act Nutrition Program meals are culturally appropriate, what nutrients should be targeted?
4. How can Older Americans Act Nutrition Program meals be evaluated for meeting the Recommended Dietary Allowances, Adequate Intakes, and *2000 Dietary Guidelines*?
5. How can Older Americans Act Nutrition Program meals be adjusted to meet special dietary needs?
6. How can nutrition services, including nutrition screening, education, and counseling, incorporate the Dietary Reference Intakes, *2000 Dietary Guidelines*, and targeted nutrients recommendations?
7. What nutrition-related issues need attention at future Issue Panels and/or in outcomes research?

The Issue Panel format generated much excitement among panelists regarding using a similar model to address nutrition and aging issues in the future. At the end of the meeting, panelists devoted time to discussion topic #7, ie, developing a list of other topics they would like to see addressed in future issue panels. The list is presented on the last page of this summary.

This summary is Part 1 of a two-part report. Part 2 is the background information, data, references, tables, and panel directory prepared as a backgrounder by the National Policy and Resource Center on Nutrition and Aging.

DISCUSSION TOPICS

TOPIC #1. Why must Older Americans Act Nutrition Program meals meet the most current Recommended Dietary Allowances and Adequate Intakes (as components of the Dietary Reference Intakes), and the 2000 Dietary Guidelines for Americans?

Panelists agreed nearly unanimously that meals must meet the most current RDAs and Adequate Intakes (AIs), and the 2000 DGs, given the wording of the OAA and other fundamental reasons for this action.

- a. The DRIs and 2000 DGs offer the best scientific evidence as to the nutrient levels most appropriate for older adults.

There are many critical differences between the DRIs and the 1989 RDAs that make the DRIs better for guidance. Unlike the 1989 RDAs, which only had gender-specific reference values for a single age category (51+ years), the DRIs have gender-specific reference values for individuals aged 51 to 70 and those over 70 years. Additionally, the DRIs make distinction among four levels of dietary values. While the DRIs include RDAs, they also provide EARs (the estimated average requirement, the level that meets the nutrient needs of half the population) for group assessment and AIs (adequate intakes when scientific evidence is inadequate to establish an EAR). Further, the DRIs have ULs (tolerable upper intake levels), indicating the highest average daily nutrient intake level that poses no risk of adverse health effects.

The emphasis on certain topics in the 2000 DGs also differs from earlier versions. These topics reflect emerging science and are consistent with public health messages from other federal agencies. In addition to changes in the Guideline on fat and addition of the Guideline on food safety (see Introduction), the 1995 fruits, vegetables, and grains guideline was separated into two guidelines in 2000 because of differences in nutrient content of these food groups and because barriers to the consumption of fruits and vegetables are different than those for grains.

- b. The DRIs and 2000 DGs provide a sound structure for nutrition program standards.

This structure can serve as the backbone for programs across the country, which aids in ensuring quality control. Such standards not only provide guidance for program staff, but also provide reassurance to the participants served by these programs. This type of structure also provides standards that the food industry can use to develop food items for the Nutrition Programs. Additionally, using the DRIs and 2000 DGs can serve as a framework for individual and group assessment, and planning and evaluating nutrition education, counseling, and other nutrition services.

TOPIC #3. Assuming that all Older Americans Act Nutrition Program meals are culturally appropriate, what nutrients should be targeted?

Since the inception of the Nutrition Programs, the aging network has emphasized “lead” nutrients, such as vitamins A and C, for which daily consumption offers benefits in preventing disease and promoting health beyond just eating a balanced diet. Panelists nearly unanimously agreed that there are multiple benefits to emphasizing specific nutrients. However, much discussion ensued regarding which nutrients should be targeted in meals. It was felt that although significant scientific evidence exists, it was still unclear how to interpret that evidence and determine its impact on practical applications. It was unanimously agreed that the topic of targeting specific nutrients should be the focus of a future Issue Panel and that the forthcoming DRI reports of the Food and Nutrition Board of the Institute of Medicine on macronutrients and on water and electrolytes will help guide future discussion.

Panelists agreed on several principles that should direct the selection of targeted nutrients:

- a. Targeted nutrients should be those that are deficient in the dietary intake of older adults and thus impact public health issues that are relevant for older Americans. Panelists would like to see that recommendations for targeted nutrients are tied into broader public health efforts and national guidance.
- b. Targeted nutrients should serve as markers for other nutrients. The targeted nutrients should allow meals to provide nutrients that are often found in foods along with other important or “key” nutrients. Thus, Nutrition Programs could safely assume that a meal provides the totality of needed nutrients, even if menu planning focused only on certain specific nutrients.
- c. Targeted nutrients should be those that can be evaluated by Nutrition Program staff routinely with computer-assisted menu analysis. It is not intended that program staff have an added burden of evaluating difficult-to-track nutrients.

With much discussion, panelists agreed that fiber, calcium, and possibly protein should be targeted in Nutrition Programs. It was also agreed that due to age-related problems with absorbing vitamin B12 and absorbing or metabolizing vitamin D, these vitamins should come primarily from fortified foods or supplements. However, the OAA does not pay for vitamin or mineral supplements. Other nutrients that were debated included fat, vitamins E, B6, folate, and magnesium.

There was also debate about whether or not Nutrition Programs should continue to target vitamins A and C. Panelists agreed that any emphasis on vitamin A should be modified to a focus on vegetable-derived vitamin A food sources (eg, those rich in carotenoids), rather than animal-derived sources of vitamin A – which may have adverse effects at higher intake levels.

Panelists also agreed that emphasis on targeted nutrients may be extended to emphasis on specific foods – as indicated by the *2000 Dietary Guidelines*. It was agreed that emphasizing increased fruit and vegetable intake offers a variety of health benefits.

RECOMMENDATION:

In addition to providing meals that meet the *2000 Dietary Guidelines* and 1/3 of the RDAs/AIs, Older Americans Act Nutrition Programs should emphasize foods that are high in fiber, calcium, and protein. To the extent possible, programs should continue to target vitamins A and C, with vitamin A provided from vegetable-derived (carotenoid) sources. However, targeting specific nutrients such as those mentioned in this recommendation should not be misinterpreted as permission to ignore other nutrients. More specific recommendations regarding targeting nutrients should be addressed at a future Issue Panel.

TOPIC #4. How can Older Americans Act Nutrition Program meals be evaluated for meeting the Recommended Dietary Allowances, Adequate Intakes, and *2000 Dietary Guidelines*?

The local flexibility allowed in the Nutrition Programs may mean that there are gaps in provision of specific nutrients or in meeting the RDA/AI and/or *2000 DG* requirements. Panelists agreed that there are several ways that meeting the RDAs/AIs and *2000 DGs* requirements can be evaluated and monitored. While other menu planning methods are possible, many panelists wanted to see programs use computer-assisted menu analysis. However, they recognized that there are logistical problems associated with this choice, such as the lack of computer and software resources currently available to local programs. While some saw a need for evaluation based on food items, such as a meal pattern, most thought that meal patterns were only a first step in designing menus and that computer-assisted analysis is needed. It was noted that meal patterns alone do not guarantee that meals will meet OAA standards, and thus do not assure adequate intake. Computer-assisted analysis is a means of assuring that all nutrients addressed by the DRIs and *2000 DGs* are included in Nutrition Program meals. Panelists also recognized that the lack of a Registered Dietitian (or individual with comparable expertise) in many state, area, and local Nutrition Programs means that the individual most qualified for menu planning, evaluation, and monitoring is not available. Discussion continued at length on these issues with the following concerns:

- a. Regarding computer-assisted analysis, panelists discussed the possibility that Nutrition Programs would analyze meals randomly from each week, at a minimum, in an established cycle to compare them to requirements. However, Nutrition Programs should establish procedures to assure that requirements are met consistently.
- b. Regarding approved meal patterns, if a standard meal pattern is developed that delineates specific food servings using the Food Guide Pyramid that combined would meet 1/3 the RDAs/AIs, and the *2000 Dietary Guidelines*, it would at least have to include additional

servings of fruits, vegetables, and whole grains such as the example meal pattern provided in Part 2 of this report (Tab 4). In addition, any meal pattern needs evaluation using computer analysis before being used to assure that it meets requirements.

c. State, Tribe, AAA, and local Nutrition Programs could develop manuals that contain specific menus, standardized recipes, and analysis data that meet the OAA standards.

d. Panelists emphasized the need to have Registered Dietitians (or individuals with comparable expertise) available to evaluate meals, menus, recipes, food safety compliance, food service quality, and customer needs and satisfaction in order to meet the OAA intent.

RECOMMENDATION:

Older Americans Act Nutrition Programs should plan and evaluate meals for meeting the 2000 Dietary Guidelines and 1/3 RDA/AI standards by computer-assisted analysis. Furthermore, Registered Dietitians (or individuals with comparable expertise) should be available at the state, area, and local provider level to assure nutrient adequacy of meals. If a meal pattern is used, it should be based on the food servings delineated in the Food Guide Pyramid that combined would meet 1/3 the RDAs/AIs and the 2000 Dietary Guidelines, be tested for meeting standards, and include increased servings of fruits, vegetables, and whole grains.

TOPIC #5. How can Older Americans Act Nutrition Program meals be adjusted to meet special dietary needs?

Panelists generally agreed that all meals should be culturally appropriate and meet the needs of the local population. It was also agreed that local providers should offer choices that meet the preferences of local populations. Additionally, some “reasonable” accommodations should be made for Nutrition Program participants who have specific dietary needs that relate to health conditions. Panelists agreed that “reasonable” accommodations can be difficult to define across many Nutrition Programs. They acknowledged that accommodations may vary depending on available resources and the specific populations that Nutrition Programs serve. Panelists noted that resources need to be devoted to purchasing a greater variety of foods and also to hiring appropriate staff who can prepare and serve different foods.

Examples of simple substitutions that may be easily addressed by Nutrition Programs include:

- ?? Low-salt food items for participants with hypertension or risk factors for hypertension;

?? Low simple carbohydrate desserts for participants with diabetes or risk factors for diabetes.

However, panelists acknowledged that greater resources would likely be needed for greater levels of customization. Panelists would like to see more regionally focused and culturally-based meals. Additionally, if Registered Dietitians (or individuals with comparable expertise) were available to design menus for individuals, the meals served could better meet specific food and/or nutrient needs. It was noted that complicated circumstances need professional nutrition intervention to develop individualized nutrition care plans and counseling via Medical Nutrition Therapy. Moreover, Nutrition Programs could regularly conduct needs assessments of the populations they serve. In some cases, they may find that atypical meal needs are widespread and should be the basis for designing the usual meal that is provided. Panelists would also like to see specific diet accommodations made for texture modified meals/menu items for older adults who have difficulty chewing and swallowing.

RECOMMENDATION:

Assuming culturally appropriate meals, Older Americans Act Nutrition Programs should accommodate specific dietary needs to the extent possible. To better serve defined groups and individuals who require customization or therapeutic diets, Nutrition Programs would benefit from the availability of Registered Dietitians (or individuals with comparable expertise) -- who could also conduct needs assessments of the populations their programs serve.

TOPIC #6. How can nutrition services, including nutrition screening, education, and counseling, incorporate the Dietary Reference Intakes, the 2000 Dietary Guidelines, and targeted nutrients recommendations?

Panelists unanimously supported the importance of including nutrition screening, education, and counseling in OAA Nutrition Programs, reiterating that nutrition services affect participants in many more ways than simply serving them meals. Panelists recognized the importance of having nutrition services that complement the meals, as they affect the overall health, functional independence, and quality of life of older adult participants. Thus, panelists agreed that other nutrition services should utilize the same standards, ie, the DRIs and *2000 Dietary Guidelines*, as the meal services.

Panelists further agreed that it might be possible to develop effective nutrition screening, education, and counseling tools that would be appropriate for the majority of Nutrition Programs. However, they emphasized the importance of Nutrition Programs developing customized materials to best serve the needs of their participants. They would rather see that Nutrition Programs be provided with effective, evidence-based materials that may avoid unnecessary duplicative efforts and serve as best practice models.

It was agreed that effective nutrition screening, education, and counseling materials would be:

- ?? Customized to the type of education and interventions shown to work in older adult populations;
- ?? Customized to the specific nutrition needs of older adults;
- ?? Customized to the visual needs of older adults, with features such as a large font size;
- ?? Customized to the appropriate literacy level of the older adult population being served;
- ?? Customized to the needs of specific cultural groups, including language needs and culturally-appropriate interpretations of health and dietary behaviors;
- ?? Developed in conjunction with substantial input and decision-making from targeted groups, especially low-income and minority groups; and
- ?? Evaluated and proven effective at changing dietary and health behavior in older adults.

Related strategies explored by panelists, included:

- ?? Creation of an advisory board to review existing and future materials;
- ?? Creation of an older adult Food Guide Pyramid; and
- ?? Dissemination of older adult-friendly materials through a website.

RECOMMENDATION:

As the Older Americans Act Nutrition Programs aim to improve the overall health, functionality, and quality of life of older adults, they should emphasize nutrition screening, education and counseling. New or existing nutrition screening, education, and counseling tools and services should reflect the standards established by the Dietary Reference Intakes and the *2000 Dietary Guidelines*.

TOPIC #7. What nutrition-related issues need attention at future Issue Panels and/or in outcomes research?

Panelists raised important issues that could not be fully addressed within the scope and timeframe of this Issue Panel. They agreed that future issue panels are necessary to address these topics. The first four topics (below) received the most widespread support from panelists.

a. **Nutrients to be targeted in Older Americans Act Nutrition Programs:** Although it was agreed that there is scientific evidence for differences in the requirements and intakes of older adults for specific nutrients, it was recognized that the interpretation of the evidence is unclear as is what impact the evidence should have in nutrition services.

b. **Outcomes-based research and demonstration projects:** Panelists emphasized that outcomes-based research is important for two reasons. First, it documents the effectiveness of the services that Nutrition Programs provide. Second, by demonstrating the value of effective Nutrition Program services, it can raise awareness and funding support for these services. Specifically, panelists would like to see projects that demonstrate that incremental funding spent on nutrition services reduces health care costs not only by improving health, functionality, and quality of life but also by delaying or preventing institutionalizations. Panelists would like to explore a prioritization of research topics and ways to ensure that results are communicated effectively to the public and policy makers.

c. **Creating a balance between national uniformity and local autonomy:** On the one hand, providing guidance for Nutrition Programs that would necessitate greater uniformity in services may provide a higher overall quality of services as well as reduce inefficiencies resulting from each Nutrition Program “reinventing the wheel.” On the other hand, continuing to give programs significant autonomy provides more opportunities for creative solutions to problems, and allows customization of services for varying population needs. Panelists were eager to discuss strategies for finding the right balance and greater opportunities for sharing best practices across programs.

d. **Resource development:** Panelists expressed a variety of opinions about why the Nutrition Programs have not received as much attention and support, including financial support, as have other nutrition programs, like WIC. Panelists would like to explore those reasons and strategies for addressing this gap. They would like to explore political strategies at the national level, such as leveraging support from strengths and knowledge across national aging network organizations, as well as strategies at the provider level, such as methods of combining funding streams to maximize results.

Other topics suggested for future Issue Panels were:

- ?? Implementing the forthcoming *Dietary Reference Intakes Applications in Dietary Planning* report of the NAS;
- ?? Health disparities and minority issues;
- ?? Weight management, including underweight, overweight, and obesity;

- ?? Food service, including technology, food preparation and delivery, and food costs;
- ?? Food safety issues;
- ?? Title VI programs and services;
- ?? Food security and hunger;
- ?? Nutrition and physical activity, in relation to functionality;
- ?? Nutrition care planning including screening and assessment, therapeutic interventions and supplement use;
- ?? Effective nutrition education programs;
- ?? Programmatic issues: unmet needs, waiting lists, screening criteria, customer assessment, resources and Registered Dietitian (or ICE) involvement; and
- ?? Assessments of what Nutrition Program participants are actually eating versus what is served.

SUMMARY OF TOPICS AND RECOMMENDATIONS

TOPIC #1. Why must Older Americans Act Nutrition Program meals meet the most current Recommended Dietary Allowances and Adequate Intakes (as components of the Dietary Reference Intakes), and the 2000 Dietary Guidelines for Americans?

RECOMMENDATION:

Older Americans Act Nutrition Program meals should meet the current RDAs and AIs, and the 2000 Dietary Guidelines for Americans, as these reflect the most recent scientific evidence and provide the best-known guidance for meeting the nutrition needs of most older adults in America.

TOPIC #2. Must each Older Americans Act Nutrition Program meal *individually* meet these requirements?

RECOMMENDATION:

Older Americans Act Nutrition Programs should strive to ensure that each meal is reasonably well-balanced nutritionally and reflects the 2000 Dietary Guidelines since the meals provide a positive nutrition education model for participants. To best serve the nutrition and educational needs of participants, Nutrition Programs that serve 1 meal per day should ensure that each meal offers at least 33 1/3% of the RDAs/AIs. Nutrition Programs that offer two meals per day, for example, should ensure that the sum of the two meals offers at least 66 2/3% of the RDAs/AIs (but each meal itself does not have to be 33 1/3%) and those serving three meals per day should ensure that the sum of these three meals offers 100% of the RDAs/AIs.

TOPIC #3. Assuming that all Older Americans Act Nutrition Program meals are culturally appropriate, what nutrients should be targeted?

RECOMMENDATION:

In addition to providing meals that meet the *2000 Dietary Guidelines* and 1/3 of the RDAs/AIs, Older Americans Act Nutrition Programs should emphasize foods that are high in fiber, calcium, and protein. To the extent possible, programs should continue to target vitamins A and C, with vitamin A provided from vegetable-derived (carotenoid) sources. However, targeting specific nutrients such as those mentioned in this recommendation should not be misinterpreted as permission to ignore other nutrients. More specific recommendations regarding targeting nutrients should be addressed at a future Issue Panel.

TOPIC #4. How can Older Americans Act Nutrition Program meals be evaluated for meeting the Recommended Dietary Allowances, Adequate Intakes, and *2000 Dietary Guidelines*?

RECOMMENDATION:

Older Americans Act Nutrition Programs should plan and evaluate meals for meeting the *2000 Dietary Guidelines* and 1/3 RDA/AI standards by computer-assisted analysis. Furthermore, Registered Dietitians (or individuals with comparable expertise) should be available at the state, area, and local provider level to assure nutrient adequacy of meals. If a meal pattern is used, it should be based on the food servings delineated in the Food Guide Pyramid that combined would meet 1/3 the RDAs/AIs and the *2000 Dietary Guidelines*, be tested for meeting standards, and include increased servings of fruits, vegetables, and whole grains.

TOPIC #5. How can Older Americans Act Nutrition Program meals be adjusted to meet special dietary needs?

RECOMMENDATION:

Assuming culturally appropriate meals, Older Americans Act Nutrition Programs should accommodate specific dietary needs to the extent possible. To better serve defined groups and individuals who require customization or therapeutic diets, Nutrition Programs would benefit from the availability of Registered Dietitians (or individuals with comparable expertise) - who could also conduct needs assessments of the populations their programs serve.

TOPIC #6. How can nutrition services, including nutrition screening, education, and counseling, incorporate the Dietary Reference Intakes, the *2000 Dietary Guidelines*, and targeted nutrients recommendations?

RECOMMENDATION:

As the Older Americans Act Nutrition Programs aim to improve the overall health, functionality, and quality of life of older adults, they should emphasize nutrition screening, education and counseling. New or existing nutrition screening, education, and counseling tools and services should reflect the standards established by the Dietary Reference Intakes and the *2000 Dietary Guidelines*.

TOPIC #7. What nutrition-related issues need attention at future Issue Panels and/or in outcomes research?

ISSUES FOR FURTHER ATTENTION:

- a. Nutrients to be targeted in Older Americans Act Nutrition Programs**
- b. Outcomes-based research and demonstration projects**
- c. Creating a balance between national uniformity and local autonomy**
- d. Resource development**

Other recommended issues:

- ?? Implementing the forthcoming *Dietary Reference Intakes Applications in Dietary Planning* report of the NAS;
- ?? Health disparities and minority issues;
- ?? Weight management, including underweight, overweight, and obesity;
- ?? Food service, including technology, food preparation and delivery, and food costs;
- ?? Food safety issues;
- ?? Title VI programs and services;
- ?? Food security and hunger;
- ?? Nutrition and physical activity, in relation to functionality;
- ?? Nutrition care planning including screening and assessment, therapeutic interventions and supplement use;
- ?? Effective nutrition education programs;
- ?? Programmatic issues: unmet needs, waiting lists, screening criteria, customer assessment, resources and Registered Dietitian (or ICE) involvement; and
- ?? Assessments of what Nutrition Program participants are actually eating versus what is served.

PART 2
BACKGROUNDERS FOR THE ISSUE PANEL
HELD ON FEBRUARY 11TH, 2002

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**ISSUE PANEL: DIETARY REFERENCE INTAKES AND DIETARY GUIDELINES
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PART 2: BACKGROUNDER
OVERVIEW**

INTRODUCTION

The Older Americans Act Nutrition Program administered by the federal Administration on Aging (AoA) provides congregate and home-delivered meals, nutrition screening, nutrition education, and nutrition counseling services. The Program serves about 250 million congregate and home-delivered meals to approximately 3 million older adults annually. Almost half the Older Americans Act \$1.1 billion budget administered by AoA goes to the Nutrition Program.

Programs are required by federal law to "... provide meals that (i) comply with the *Dietary Guidelines for Americans*, ... and (ii) provide to each participating older individual (I) a minimum of 33 1/3 percent of the daily recommended dietary allowances... if the project provides one meal per day, (II) a minimum of 66 2/3 percent of the allowances if the project provides two meals per day, and (III) 100 percent of the allowances if the project provides three meals per day...." (Public Law 106-501, Sec.339 Nutrition (2)(A)).

Congress passed the latest 5-year reauthorization of the Older Americans Act (OAA) in 2000. The Act, like its predecessors, does not specify using the most recent versions of the *Dietary Reference Intakes* (DRIs) that were published sequentially by nutrient groups by the Institute of Medicine (IOM), in 1997, 1998, 2000, 2001, and the *2000 Dietary Guidelines for Americans*, (DGs) (1-5). It is generally assumed among nutrition professionals that these new documents should be used, as they supercede previous ones and usually include new information. For example, unlike the 1989 edition of the *Recommended Dietary Allowances* (RDAs) (6), the DRIs include reference values for men and women aged 51 to 70 and over 70 years. Yet many Programs are still using the 1989 RDAs and older versions of the *Dietary Guidelines*. Some have begun using the DRIs and DGs not only when planning menus, but also when designing, implementing, and assessing nutrition services.

GOAL AND OBJECTIVES

Goal: The Issue Panel focused on whether the DRIs and 2000 DGs should be used in Older Americans Act Nutrition Programs. The Panel developed recommendations regarding the application of the DRIs and 2000 DGs in the provision of nutrition services, including nutrition education, nutrition counseling, and congregate and home-delivered meals.

These recommendations are being presented for consideration by the US Administration on Aging to assist in development of guidance and technical assistance related to implementation of the DRIs and 2000 DGs in the Older Americans Act

Nutrition Programs. Such guidance and assistance could be adopted by State Units on Aging (SUAs) for implementation by the State Unit, Area Agencies on Aging (AAAs), and local service providers.

Objectives: The purpose of the Issue Panel was to

1. Determine whether meals should meet the most current Recommended Dietary Allowances and Adequate Intakes as components of the Dietary Reference Intakes (DRIs) and *2000 Dietary Guidelines* (DGs) in Older Americans Act Nutrition Programs;
2. Determine whether each meal must individually meet these requirements;
3. Determine which nutrients should be targeted when planning (culturally appropriate) meals;
4. Identify how meals can be evaluated for meeting the RDAs, AIs, and 2000 DGs;
5. Determine how meals can be adjusted to meet special dietary needs;
6. Describe the role of other nutrition services, including nutrition screening, education and counseling, in relation to the DRIs and 2000 DGs; and
7. Identify priority nutrition-related topics that future should be addressed at future Issue Panels or in outcomes research.

BACKGROUNDER INFORMATION

The National Policy and Research Center on Nutrition and Aging compiled background information, data, references, charts and tables as a Backgrounder for the Issue Panel. The information is presented by Issue Panel discussion topics #1-7 with the tables and charts following the 7 topics. Each topic section begins with excerpts from the Older Americans Act, followed by findings from the 1998 SUA Policies and Procedures Data Collection housed at the Center, excerpts from related scientific and practical evidence, working documents (the tables described below), additional background information, and references.

Table 1 “Dietary Reference Intakes for Older Adults” presents the DRI values for men and women aged 51 to 70 and over 70 years. They include the Recommended Dietary Allowance (RDA) or Adequate Intake (AI) for nutrients with no established RDA, and the Tolerable Upper Intake Level (UL). The RDA is the average daily dietary intake level that is sufficient to meet the nutrient requirement for nearly all (97-98%) healthy individuals of a specified age range and gender. The AI is the daily dietary intake level of healthy people assumed to be adequate when there is insufficient evidence to set an RDA. It is based on observed mean nutrient intakes and experimental data. The UL is the highest daily dietary intake that is likely to pose no risk of adverse health effects to almost all of individuals of a specific age range.

Table 2 “Nutrient Availability of an Older Americans Nutrition Program Meal Relative to the Dietary Reference Intakes and Recommended Dietary Allowances” compares the nutrient availability of Older Americans Nutrition Program meals to the DRI values (RDA/AI). The data on the nutrient content of Nutrition Program meals

comes from *Serving Elders at Risk, the Older Americans Act Nutrition Programs: National Evaluation of the Elderly Nutrition Program 1993-1995, Volume I: Title III Evaluation Findings Executive Summary* (7).

Table 3 “Comparison of National Studies for Mean Nutrient Intakes of Older Adults” compares data from NHANES III, CSFII 1994-96, and *Serving Elders at Risk, the Older Americans Act Nutrition Programs: National Evaluation of the Elderly Nutrition Program 1993-1995, Volume I: Title III Evaluation Findings Executive Summary* (7). The NHANES III and CSFII 1994-96 data come from Wakimoto P, Block G. Dietary intake, dietary patterns, and changes with age: an epidemiological perspective. *J Gerontol Series A*. 2001;56A (Special Issue II):65-80 (8).

Table 4.1 “Nutrient Composition of the 1972 Meal Pattern” presents a meal pattern from the *Guide to Effective Project Operations, The Nutrition Program for the Elderly* (the *Oregon Guide 1973*). It was assumed that if a variety of foods were provided daily in the amounts indicated and proper food preparation and handling was practiced, the meal would provide at least 1/3 of the 1968 RDAs. The pattern became the quick checklist for determining the nutritional adequacy of a meal. This meal pattern has been in use with little or no modification for the past 30 years. Some states have since added requirements to ensure that meals provide foods high in specific nutrients such as Vitamin A and C. Some have gone further to address other nutrients as well.

Table 4.2 “Nutrient Composition of a Meal Pattern to Meet ~33.3% RDA/AI Using the Recommended Number of Servings for ... Women, Some Older Adults (about 1600 calories)” is a meal pattern developed by the Center to meet the most current Dietary Guidelines for Americans (2000) recommendations for energy. The number of servings for each food group (excluding dessert items) is based on the serving sizes in the Food Guide Pyramid for individuals requiring about 1600 Calories daily (eg, sedentary women and some older adults). The number of servings reflects an appropriate distribution of foods for the day, particularly for lunch or supper. The nutrient values shown for each food group are based on USDA’s *Food Guide: Background and Development*, Table 5 “Nutrient profiles for food groups and subgroup composites.” As a preliminary step to determining the number of servings to recommend for each food group in the Food Guide Pyramid, USDA established a nutrient profile for each group. These profiles represent the quantities of nutrients and other components that one would expect to obtain on average from a serving of food in each group. The table provides the most current RDA for selected nutrients to compare with the total nutrient content provided by this meal pattern. The total does not take into account a dessert item that, if carefully chosen, can positively influence the total nutrient value of the meal.

Table 4.3 “Nutrient Composition of a Meal Pattern to Meet ~33.3% RDA/AI and the 1989 RDA for Energy (1900 (F) and 2300 (M) calories)” is a meal pattern developed by the Center to meet the most current RDA recommendations for energy (1989 RDA energy (calorie) requirements for men and women over 50). The number of servings for each food group (excluding dessert items) is based on the higher energy requirement for men. The nutrient content of each food group is based on USDA’s *Food Guide: Background and Development* nutrient profiles as described for Table 4.2. To increase the caloric level of the meal pattern to 767 kcal for men as 1/3 RDA, the number of servings was adjusted upward for the bread, vegetable, and meat food groups. The

table also provides the most current RDA for selected nutrients to compare with the total nutrient content provided by this meal pattern. The total does not take into account the dessert item that, if carefully chosen, can positively influence the total nutrient value of the meal.

Chart 1 “Dietary Guidelines for Americans 1980-2000” compares the changes that have occurred in the *Dietary Guidelines* from 1980 to 2000. This chart is from the USDA Center for Nutrition Policy and Promotion.

DISCUSSION QUESTION #1

Why must older Americans Act Nutrition Program meals meet the most current Recommended Dietary Allowances and Adequate Intakes (as components of the Dietary Reference Intakes), and the 2000 Dietary Guidelines for Americans?

OAA requirements

1. SEC. 339 (2)(A)(i) State ... shall ensure that project provides meals that comply with the Dietary Guidelines for Americans.
2. SEC. 339 (2)(A)(ii) State ... shall ensure that project provides meals that provide ... a minimum of 33 1/3% of the daily RDA ... if one meal per day ... 66 2/3% RDA if ... 2 meals per day, and 100% RDA for 3 meals per day.
3. SEC. 614 (a)(8)...eligible tribal organization...provide assistance...with appropriate entities nutrition services will be delivered to older individuals who are Indians...substantially in compliance with the provisions of part C of title III...

State Documents

- 1998 SUA Policies and Procedures Collection (9)
 - o 40 (91%) have guidelines that meals must comply with 33% of the RDA.
 - o 35 (79%) have guidelines for compliance with *Dietary Guidelines*.
 - o 34 (77%) have guidelines for meal patterns.

Related Scientific and Practice Evidence

- “considerable guidance would be needed to assist ... from former RDAs to using the new DRIs ... (10).
- USDA (National School Lunch Program, Child and Adult Care Food Programs) requires adherence to a meal pattern (11).

Working Documents

- Table 1. Dietary Reference Intakes for Older Adults.

DISCUSSION QUESTION #2

Must each Older Americans Act Nutrition Program meal *individually* meet these requirements?

OAA requirements

- SEC. 339 (2)(A)(i) State ... shall ensure that project provides meals that comply with the Dietary Guidelines for Americans.

- SEC. 339 (2)(A)(ii) State ... shall ensure that project provides meals that provide ... a minimum of 33 1/3% of the daily RDA ... if one meal per day ... 66 2/3% RDA if ... 2 meals per day, and 100% RDA for 3 meals per day.

Related Scientific and Practice Evidence

DRIs:

- o IOM: "A forthcoming report from this Subcommittee will address applications of DRIs in dietary planning." (10, p. xi)
- o DRIs, including RDAs, are all defined as "the average daily nutrient intake level(s)..." (10, p. 3)
- o Historical precedent: 1989 RDAs footnote "The allowances, expressed as average daily intakes over time, are intended to provide for individual variations among most normal persons as they live in the US under usual environmental stresses. Diets should be based on a variety of common foods in order to provide other nutrients for which human requirements have been less well defined."(6)

DGs:

- o "Aim, Build, Choose—for Good Health. By following all of the guidelines ..., you can promote your health and reduce your risk for chronic diseases such as heart disease, certain types of cancer, diabetes, stroke, and osteoporosis. ...It is important for everyone to follow the 10 Dietary Guidelines.... If you are at higher risk for a chronic disease, it is especially important." (5, p. 3)

Working Documents

Table 2. Nutrient Availability of an Older Americans Nutrition Program Meal Relative to Dietary Reference Intakes and Recommended Dietary Allowances.

DISCUSSION QUESTION #3

Assuming that all Older Americans Act Nutrition Program meals are culturally appropriate, what nutrients should be targeted?

OAA requirements

- SEC. 339 (2)(A)(iii) ensure that the project... provide(s) meals that to the maximum extent practical, are adjusted to meet any special dietary needs of program participants.
- SEC. 339 (2)(B) ...provides flexibility to local nutrition providers in designing meals that are appealing to program participants.

- SEC. 614 (c)(3) ...in determining whether an application complies with the requirements of subsection (a)(8),... provide maximum flexibility ... subsistence needs, local customs, and other characteristics that are appropriate to the unique cultural, regional, and geographic needs of the Indian populations to be served.

State Documents

- 1998 SUA Policies and Procedures Collection (9)
 - o 37 (84%) have guidelines for special diets for health, religious, or ethnic reasons.
 - o 21 (48%) have guidelines for sodium and fat content of meals.
- Some “standard” meal patterns require foods high in vitamin C daily and vitamin A 3 times a week (12).

Related Scientific and Practice Evidence

- The National Evaluation (7) revealed that OAA Nutrition Program Title III and Title VI meals supply over 33% of the 1989 RDAs for key nutrients. When compared to the DRIs, meals were inadequate in vitamins D and E, folate, calcium, and magnesium.
- CSFII 1994-96 (13) found older adults’ dietary intake to be low in calories, total fat, fiber, carbohydrate, vitamin E, folate, calcium, and magnesium.
- NHANES III (14) found older adults’ dietary intake to be low in calories, total fat, fiber, calcium, magnesium, zinc, copper, folate, and vitamins B6, C and E.
- “Energy and quantity of food declines with age ... with decline in nutrient intake ... protein, zinc, calcium, vitamin E ...” (8).
- *Dietary Guidelines for Americans 2000* (5): Food Guide Pyramid for “...women, some older adults (about 1600 calories)”: 6 servings grains group, 3 servings vegetable group, 2 servings fruit group, 3 servings milk group (low-fat), and 2 servings (total of 5 oz) meat and beans group; plus low in saturated fat and cholesterol, less salt, moderate sugar and alcohol.

Working Documents

- Table 2. Nutrient Availability of an Older Americans Nutrition Program Meal Relative to Dietary Reference Intakes and Recommended Dietary Allowances.
- Issue Panel Table 3. Comparison of National Studies for Mean Nutrient Intakes of Older Adults.

DISCUSSION QUESTION #4

How can Older Americans Act Nutrition Program meals be evaluated for meeting the Recommended Dietary Allowances, Adequate Intakes, and 2000 Dietary Guidelines?

OAA requirements

- SEC. 339 (1) *State ... shall solicit the advise of a dietitian or individual with comparable expertise in the planning of nutrition services.*
- SEC. 339 (2)(G) *State ... ensure that the project ... ensures that meal providers carry out such project with the advice of dietitians ...*
- SEC. 614 (a)(8) *...eligible tribal organization...provide assistance...with appropriate entities nutrition services will be delivered to older individuals who are Indians...substantially in compliance with the provisions of part C of title III...*

State Documents

- 1998 SUA Policies and Procedures Collection (9)
 - o 35 (77%) have guidelines for dietitians at any level.
 - o 34 (77%) have guidelines for meal patterns.
 - o 23 (52%) have guidelines for use of computer assisted menu analysis.
 - o 20 (45%) have guidelines for the services of a registered and/or licensed dietitian or individual with comparable nutrition expertise at the AAA or local nutrition service provider level.
 - o 16 (36%) have guidelines for the use of standardized recipes.
 - o 10 (23%) have no mention of utilizing the services of a dietitian at any level.

Related Scientific and Practice Evidence

- *IOM* (15) recognized and recommended use of registered dietitians (RDs):
 - o “the single identifiable group with standardized education, clinical training, continuing education, and national credentialing requirements ...”
 - o “...accreditation and licensing groups should reevaluate existing reimbursement systems and regulations for nutrition services along the continuum of care to determine the adequacy of care delineated by such standards.”
- *1995 State Units on Aging Nutritionists Meeting*: Roles and responsibilities of the dietitian should include: "needs assessment, advocating for older adults, developing and implementing policy including nutrition screening, budgeting, contracting, grant writing, establishing program priorities, technical assistance and training, menu planning, conducting surveys and outcomes research to evaluate program effectiveness, developing linkages ..."

- *National Evaluation (7)* found 85% of state agencies, 73% of area agencies, 60% of local nutrition projects, had access to staff with nutrition credentials. However, 31%, 39%, and 59%, respectively, had no RD, *per se*. Of those that had RDs, duties included management, administration, technical assistance, training, development of materials, standards, and protocols, monitoring and assessing services, and providing services.
- “high standards of menu planning can be met in different ... settings of OAA Nutrition Programs (16)
- “greater satisfaction ... with the nutrition program suggests that the use of the microcomputer was a positive element ... (17).

Working Documents

- Issue Panel Table 4.1. Nutrient Composition of the 1972 Meal Pattern.
- Issue Panel Table 4.2. Nutrient Composition of a Meal Pattern to meet ~33.3% RDA/AI Using the Recommended Number of Servings for “...Women, Some Older Adults (About 1600 Calories).”
- Issue Panel Table 4.3. Nutrient Composition of a Meal Pattern to meet ~33.3% RDA/AI and the 1989 RDA for Energy (1900 (F) and 2300 (M) Calories).

DISCUSSION QUESTION #5

How can Older Americans Act Nutrition Program meals be adjusted to meet special dietary needs?

OAA requirements

- SEC. 339 (2)(A)(iii): State ... *shall ensure that the project to the maximum extent practicable is adjusted to meet any special dietary needs of program participants.*
- SEC. 339 (1) State ... *shall solicit the advise of a dietitian or individual with comparable expertise in the planning of nutrition services.*
- SEC. 339 (2)(G) State ... *ensure that the project ... ensures that meal providers carry out such project with the advice of dietitians ...*
- SEC. 614 (a)(8)...*eligible tribal organization...provide assistance...with appropriate entities nutrition services will be delivered to older individuals who are Indians...substantially in compliance with the provisions of part C of title III...*

State Documents

- 1998 SUA Policies and Procedures Collection (9)
 - o 37 (84%) have guidelines for special diets for health, religious, or ethnic reasons.

Related Scientific and Practice Evidence

- *Healthy People 2010* (18) goals and objectives: to reduce health disparities.
- *IOM* (15): “Eighty-seven percent of older Americans have either diabetes, hypertension, dyslipidemia, or a combination of these chronic diseases. These conditions all have adverse outcomes that can be ameliorated or reduced with appropriate nutrition interventions.”

DISCUSSION QUESTION #6

How can nutrition services, including nutrition screening, education, and counseling, incorporate the Dietary Reference Intakes, 2000 Dietary Guidelines, and targeted nutrients recommendations?

OAA requirements

- *SEC 102 (12) (b, c, d) Routine health screening... nutrition counseling and education services... health promotion programs.*
- *SEC. 331 (3) ... State plans ... establishment and operation of nutrition projects which may include nutrition education services and other appropriate nutrition services for older individuals.*
- *SEC. 339 (2) (J) State ... shall ensure that projects provide for nutrition screening and, where appropriate, for nutrition education and counseling.*
- *SEC. 614 (a)(8)...eligible tribal organization...provide assistance...with appropriate entities nutrition services will be delivered to older individuals who are Indians...substantially in compliance with the provisions of part C of title III...*

State Documents

- 1998 SUA Policies and Procedures Collection (9)
 - o 41 (93%) have guidelines for nutrition education.
 - o 19 (43%) have guidelines for health promotion and disease prevention activities.

Related Scientific and Practice Evidence

- *Healthy People 2010* (18) goals and objectives: to prevent chronic disease, promote functional independence, improve quality of life, and overall health.
- *IOM* (15): “87% of older Americans have either diabetes, hypertension, dyslipidemia, or a combination of these chronic diseases. These conditions all have adverse outcomes that can be ameliorated or reduced with appropriate nutrition interventions.”

DISCUSSION QUESTION #7

What nutrition-related issues need attention at future Issue Panels and/or in outcomes research?

OAA requirements (re: outcomes research)

- SEC 206 (a) *The Secretary shall measure and evaluate the impact of all programs.*
- SEC 206 (d) *The Secretary shall annually publish summaries and analyses of the results of evaluative research ... including health and nutrition education demonstration projects.*
- SEC 401 (2) *...to design, test, and promote the use of innovative ideas and best practices in programs and services for older individuals.*

State Policies and Procedures

- 1998 SUA Policies and Procedures Collection (9)
 - o 17 (39%) have guidelines on data sources to use for needs assessment.
 - o 13 (30%) have guidelines for outcomes of monitoring and assessment.
 - o 12 (27%) have guidelines on how to collect required data.

Related Scientific and Practice Evidence

- *Measuring Outcomes*: “should be conducted to evaluate program services, benefits, and cost-effectiveness, which can be used to lobby for increased federal funding and improve services to better meet older adults’ nutrition needs” (19).
- *IOM (15)*: “ Federal agencies ... should pursue a research agenda in the area of nutrition in the older person.”
- “The need for evidence-based practice arose for several reasons, such as ... variations in service delivery require description and investigation, pressure on health care resources ... demand for greater value for dollars spent ... while preserving or improving the quality of care being delivered and allowing for ... preferences. Evidence-based ... is defined as the conscientious, explicit, and judicious use of current best data in making decisions about care ... “ (20).

POSSIBLE TOPICS for FUTURE ISSUE PANELS and/or OUTCOMES RESEARCH:

- Nutrients to be targeted in Older Americans Act Nutrition Programs;
- Outcomes-based research and demonstration projects;
- Creating a balance between national uniformity and local autonomy;
- Resource development;

- Implementing the forthcoming *Dietary Reference Intakes Applications in Dietary Planning* report of the NAS;
- Health disparities and minority issues;
- Weight management, including underweight, overweight, and obesity;
- Food service, including technology, food preparation and delivery, and food costs;
- Food safety issues;
- Title VI programs and services;
- Food security and hunger;
- Nutrition and physical activity, in relation to functionality;
- Nutrition care planning including screening and assessment, therapeutic interventions and supplement use;
- Effective nutrition education programs;
- Programmatic issues: unmet needs, waiting lists, screening criteria, customer assessment, resources and Registered Dietitian (or ICE) involvement; and
- Assessments of what Nutrition Program participants are actually eating versus what is served.

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WORKING DOCUMENTS

- Table 1:** Dietary Reference Intakes for Older Adults.
- Table 2:** Nutrient Availability of an Older Americans Nutrition Program Meal Relative to the DRIs and 1989 RDAs.
- Table 3:** Comparison of National Studies for Mean Nutrient Intakes of Older Adults.
- Table 4.1:** Nutrient Composition of the 1972 Meal Pattern.
- Table 4.2:** Nutrient Composition of a Meal Pattern to meet ~33.3% RDA/AI Using the Recommended Number of Servings for "...Women, Some Older Adults (About 1600 Calories)."
- Table 4.3:** Nutrient Composition of a Meal Pattern to meet ~33.3% RDA/AI and the 1989 RDA for Energy (1900 (F) and 2300 (M) Calories).
- Chart 1:** Dietary Guidelines for Americans, 1980 to 2000

Issue Panel Table 3.

Comparison of National Studies for Mean Nutrient Intakes of Older Adults

Macronutrients	Energy (kcal)		Protein (g)		Fat (g)		Fiber (g)	
	men	women	men	women	men	women	men	women
	RDA/AI	2300	1900	63	50	76.67	63.3	27.5
NHANES III (1989-94)^{ab}								
White								
Aged 60 - 69	2118*	1602*	85	64	81	60*	17.8*	15.2*
Aged 70 - 79	1924*	1431*	75	57	74*	53*	17.7*	14.7*
Aged 80 +	1802*	1335*	69	52	69*	47*	17.1*	12.8*
Black								
Aged 60 - 69	1882*	1402*	78	56	73*	53*	13.9*	12.6*
Aged 70 - 79	1532*	1457*	63	62	59*	58*	12.9*	13.2*
Aged 80 +	n/a	1272*	n/a	50	n/a	42*	n/a	11.8*
Mexican-Amer								
Aged 60 - 69	1963*	1297*	78	56	73*	46*	20.9*	13.7*
Aged 70 - 79	1660*	1290*	73	50	59*	45*	18.0*	13.0*
Aged 80 +	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CSFII (1994-96)^{ab}								
Aged 60 - 69	2039*	1436*	82.8	59.4	76.8	52.4*	18.0*	13.6*
Aged 70 - 79	1839*	1393*	72.3	56.7	63.5*	49.8*	17.7*	14.0*
Aged 80 +	1699*	1332*	68.2	55.4	63.4*	47.7*	15.6*	13.9*
Nat'l Eval ENP (1993-95)^{ac}								
Participants (Cong=1040, HDM=818)	Cong	HDM	Cong	HDM				
	1655*	1485*	69	63.1				
Non-Participants (Cong=841, HDM=841)	1503*	1417*	63.2	59.7				

* Mean Intake Less than Recommended Value

^a NHANES III: 6830 adults > 50y; CSFII: 4700 men, 4370 women > 60y; Natl Eval: ≥ 60y

^b Data excerpted from: Wakimoto P, Block G. Dietary Intake, Dietary Patterns, and Changes With Age: An Epidemiological Perspective. J Gerontol. 2001;56A Special Issue II: 65-90

^c Data excerpted from: Serving Elders At Risk. National Evaluation of the Elderly Nutrition Program, 1993-1995.

Issue Panel Table 3. Continued

Vitamins	Vitamin A (RE)		Thiamin (mg)		Riboflavin (mg)		Vitamin B6 (mg)	
	men	women	men	women	men	women	men	women
RDA/AI	900	700	1.2	1.1	1.3	1.1	1.7	1.5
NHANES III								
White								
Aged 60 - 69	1351	1269	1.83	1.46	2.26	1.77	2.09	1.67
Aged 70 - 79	1368	1303	1.72	1.31	2.11	1.61	1.96	1.62
Aged 80 +	1227	1195	1.67	1.30	1.99	1.60	1.93	1.57
Black								
Aged 60 - 69	959	1147	1.52	1.18	1.74	1.28	1.52*	1.29*
Aged 70 - 79	1193	1297	1.43	1.24	1.73	1.43	1.65*	1.38*
Aged 80 +	n/a	n/a	n/a	1.31	n/a	1.52	n/a	1.43*
Mexican-Amer								
Aged 60 - 69	1171	784	1.55	1.10	1.90	1.40	1.68*	1.30*
Aged 70 - 79	1382	1316	1.51	1.11	1.67	n/a	1.67*	n/a
Aged 80 +	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CSFII 94-96								
Aged 60 - 69	1261	985	1.73	1.26	2.06	1.48	2.04	1.46*
Aged 70 - 79	1339	1031	1.63	1.24	2.03	1.52	1.94	1.5
Aged 80 +	1059	1149	1.49	1.20	1.76	1.52	1.73	1.5
National Evaluation								
Participants	1356	1276	1.55	1.42	1.82	1.78	1.75	1.6
Non-Participants	1078	1058	1.44	1.39	1.59	1.55	1.59*	1.5*
* Indicates Mean Intakes Lower than Recommended Values								

Issue Panel Table 3. Continued

Vitamins	Vitamin B12 (mg)		Folate (ug)		Vitamin C (mg)		Vitamin E (mg a-TE)	
	men	women	men	women	men	women	men	women
RDA/AI	2.4	2.4	400	400	90	75	15	15
NHANES III								
White								
Aged 60 - 69	6.25	4.08	335	285	106	112	10.08*	8.74*
Aged 70 - 79	5.36	3.50	310	274	102	97	8.91*	7.81*
Aged 80 +	6.12	3.29	310	256	98	106	9.45*	7.66*
Black								
Aged 60 - 69	5.18	3.82	259	240	87*	105	6.88*	6.03*
Aged 70 - 79	4.89	4.10	257	234	96	100	9.28*	6.47*
Aged 80 +	n/a	n/a	n/a	n/a	n/a	94	n/a	5.40*
Mexican-Amer								
Aged 60 - 69	6.12	3.44	327	207	111	84	7.61*	5.97*
Aged 70 - 79	n/a	n/a	244	212	127	86	6.85*	6.2*
Aged 80 +	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CSFII								
Aged 60 - 69	6.2	4.1	287	213	104	89	9.03*	6.60*
Aged 70 - 79	6.4	4.1	287	225	98	93	8.71*	6.51*
Aged 80 +	4.4	4.8	244	224	93	89	7.10*	5.97*
National Evaluation								
Participants	Cong	HDM	Cong	HDM	Cong	HDM	Cong	HDM
	4.06	4.27	266.6	249	99	88.8	8.19*	6.6*
Non-Participants	3.7	3.6	245	233	84.18*	83.4	6.6*	6.5*
* Indicates Mean Intakes Lower than Recommended Values								

Issue Panel Table 3. Continued

Minerals	Iron (mg)		Zinc (mg)		Calcium (mg)		Magnesium (mg)		Sodium (mg)	
	men	women	men	women	men	women	men	women	men	women
RDA/AI	8	8	11	8	1200	1200	420	320	2400	2400
NHANES III										
White										
Aged 60 - 69	16.84	13.23	13.38	9.88	895*	743*	333*	265*	3429	2634
Aged 70 - 79	16.10	12.90	12.24	8.79	832*	651*	308*	247*	3192	2379*
Aged 80 +	16.65	11.80	10.89*	7.83*	742*	633*	282*	221*	2912	2274*
Black										
Aged 60 - 69	13.24	10.64	10.45*	7.87*	609*	477*	246*	208*	2879	2221*
Aged 70 - 79	13.49	11.55	10.73*	8.07	608*	549*	222*	219*	2604	2200*
Aged 80 +	n/a	n/a	n/a	7.97*	n/a	484*	n/a	205*	n/a	2008*
Mexican-Amer										
Aged 60 - 69	14.65	10.56	10.64*	8.38	837*	606*	299*	216*	3138	2076*
Aged 70 - 79	14.31	11.26	9.99*	7.90*	673*	n/a	274*	201*	3098	2013*
Aged 80 +	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CSFII										
Aged 60 - 69	16.94	11.97	12.22	8.37	769*	578*	n/a	n/a	3533	2503
Aged 70 - 79	16.47	12.04	11.04	8.13	768*	593*	n/a	n/a	3106	2385*
Aged 80 +	14.52	12.20	10.07*	8.22	693*	583*	n/a	n/a	2915	2342*
National Evaluation										
Participants	Cong	HDM	Cong	HDM	Cong	HDM	Cong	HDM		
	13.1	12.4	10.1*	9.16	740.8*	728.8*	274.9*	249*		
Non-Participants	12.53	11.9	8.8*	8.5	599.2*	582.4*	237.5*	223.3*		

* Indicates Mean Intakes Lower than Recommended Values

Issue Panel Table 3. Continued

Minerals	Sodium	
	(mg)	
	men	women
RDA/AI	2400	2400
NHANES III		
White		
Aged 60 - 69	3429	2634
Aged 70 - 79	3192	2379*
Aged 80 +	2912	2274*
Black		
Aged 60 - 69	2879	2221*
Aged 70 - 79	2604	2200*
Aged 80 +	n/a	2008*
Mexican-Amer		
Aged 60 - 69	3138	2076*
Aged 70 - 79	3098	2013*
Aged 80 +	n/a	n/a
CSFII		
Aged 60 - 69	3533	2503
Aged 70 - 79	3106	2385*
Aged 80 +	2915	2342*

*** Indicates Mean Intakes Lower than Recommended Values**

Issue Panel Table 4.1. Nutrient Composition^a of the 1972 Meal Pattern^b

Food Groups	Amount	Energy	CHO ^c	Ca	Mg	Vit B ₂	Folate ^d	Vit E	Fiber ^e
	1/3 1989 RDA	633 (F) kcal 767 (M) kcal	87-105 gm	267 mg	117 mg	0.46 mg	66 ug	3.3 mg	7-12 gm
	1/3 RDA/AI			400 mg	140 mg	0.43 mg	133 ug	5 mg	
Bread/Bread Alternates: Whole Grain (Enriched)	One serving: 1 oz or ½ cup	72 (83)	14.2 (15.9)	18 (23)	21 (7)	0.06 (0.07)	14 (24)	0.2 (0.1)	1.8 (0.6)
Vegetable (average value):		57	11.6	35	27	0.06	43	0.4	2.6
Dark-green Deep-yellow^b Dry beans, peas Other Starchy Other	One serving: ½ cup	(18) (40) (115) (94) (15)	(3.3) (9.3) (20.7) (21.3) (3.2)	(76) (21) (55) (8) (15)	(42) (11) (47) (26) (10)	(0.13) (0.06) (0.05) (0.04) (0.03)	(76) (13) (78) (21) (24)	(0.8) (0.7) (0.2) (0.1) (0.3)	(1.9) (2.4) (5.3) (2.4) (1.0)
Fruit:	One serving: ½ cup	69	17.3	15	15	0.05	26	0.4	1.6
Milk/Milk Alternate: 1% Milk^d	One serving: 8 oz	118	13.6	349	39	0.47	15	0	0
Meat or Meat Alternative:	One serving: 3 oz	171	0.3	15	21	0.27	9	0.3	0
Butter or Margarine:	One teaspoon	37	0	0	0	0	0	0.6	0
Dessert (optional)	One serving: ½ cup	--	--	--	--	--	--	--	--
Totals per meal (Enriched):		524 (535)	57 (59)	432 (437)	123 (109)	0.91 (0.92)	107 (117)	1.9 (1.8)	6 (4.8)

^aCalculated using Table 5, Nutrient Profiles for Food Group and Subgroup Composites, USDA's Food Guide Background and Development, except 1% milk instead of nonfat milk.

^bRhodes SS, ed. *Effective Menu Planning for the Elderly Nutrition Program*. Chicago, IL: American Dietetic Association; 1991. Note: meal pattern requires a vegetable/fruit containing Vit A 3 times per week and Vit C daily.

^cFNB Committee on Diet and Health recommendations: 55% of total calories (NCR, 1989).

^dUSDA Nutrient Database for Standard Reference, Release 14. Available: http://www.nal.usda.gov/fnic/cgi-bin/nut_search.pl

^eNational Cancer Institute and American Dietetic Association recommend 28 gm dietary fiber daily (ADA, 1997).

Issue Panel Table 4.2. Nutrient Composition^a of a Meal Pattern to Meet ~33.3% RDA/AI Using the Recommended Number of Servings for “... Women, Some Older Adults (About 1600 Calories)”

Food Groups	Amount	Energy	CHO ^b	Ca	Mg	Vit B ₂	Folate ^c	Vit E ^d	Fiber ^e
	1/3 RDA/AI	533 kcal	73 gm	400 mg	140 mg	0.43 mg	133 ug	5 mg	7-12 gm
Breads, cereals, rice & pasta:	Two servings: 1 oz or ½ cup each One whole grain One enriched	72 83	14.2 15.9	18 23	21 7	0.06 0.07	14 24	0.2 0.1	1.8 0.6
Vegetable (average value):	One serving: ½ cup	57	11.6	35	27	0.06	43	0.4	2.6
Fruit:	One serving: ½ cup	69	17.3	15	15	0.05	26	0.4	1.6
Milk/Milk Alternate: 1% Milk^c	One serving: 8 oz	118	13.6	349	39	0.47	15	0	0
Meat or Meat Alternative:	One serving: 2.5 oz	143	0.25	12.5	17.5	0.23	7.5	0.25	0
Butter or Margarine:	One teaspoon	37	0	0	0	0	0	0.6	0
Desserts (optional):	Optional	--	--	--	--	--	--	--	--
Total per meal:		579	73	453		0.94			7

^aCalculated using Table 5, Nutrient Profiles for Food Group and Subgroup Composites, USDA's Food Guide Background and Development, except 1% milk instead of nonfat milk.

^bFNB Committee on Diet and Health recommendations: 55% of total calories (NCR, 1989).

^cUSDA Nutrient Database for Standard Reference, Release 14. Available at http://www.nal.usda.gov/fnic/cgi-bin/nut_search.pl

^dNutrient value for Vit E does not account for ingredients used in meal preparation, such as cooking oil, butter, margarine, that would help meet the AI requirement.

^eNational Cancer Institute and American Dietetic Association recommend 25 gm dietary fiber daily (ADA, 1997).

Issue Panel Table 4.3. Nutrient Composition^a of a Meal Pattern to Meet ~33.3% RDA/AI and the 1989 RDA for Energy (1900 (F) and 2300 (M) Calories)

Food Groups	Amount	Energy	CHO ^b	Ca	Mg	Vit B ₂	Folate ^c	Vit E ^d	Fiber ^e
	1/3 RDA/AI	633 (F) kcal 767 (M) kcal	87-105 gm	400 mg	140 mg	0.43 mg	133 ug	5 mg	7-12 gm
Breads, cereals, rice & pasta:	Three servings: 1 oz or ½ cup each Two whole grains One enriched	114 83	28.4 15.9	36 23	42 7	0.12 0.07	28 24	0.4 0.1	3.6 0.6
Vegetable (average value):	Two servings: ½ cup each	113	23.1	70	54	0.12	85	0.8	5.2
Fruit:	One serving: ½ cup	69	17.3	15	15	0.05	26	0.4	1.6
Milk/Milk Alternate: 1% Milk^c	One serving: 8 oz	118	13.6	349	39	0.47	15	0	0
Meat or Meat Alternative:	One serving: 3 oz	171	0.3	15	21	0.27	9	0.3	0
Butter or Margarine:	One teaspoon	37	0	0	0	0	0	0.6	0
Desserts (optional):	Optional	--	--	--	--	--	--	--	--
Total per meal:		705	98.6	508	178	1.1	187	2.6	11

^aCalculated using Table 5, Nutrient Profiles for Food Group and Subgroup Composites, USDA's Food Guide Background and Development, except 1% milk instead of nonfat milk.

^bFNB Committee on Diet and Health recommendations: 55% of total calories (NCR, 1989).

^cUSDA Nutrient Database for Standard Reference, Release 14. Available at http://www.nal.usda.gov/fnic/cgi-bin/nut_search.pl

^dNutrient value for Vit E does not account for ingredients used in meal preparation, such as cooking oil, butter, margarine, that would help meet the AI requirement.

^eNational Cancer Institute and American Dietetic Association recommend 25 gm dietary fiber daily (ADA, 1997).

DIETARY GUIDELINES FOR AMERICANS, 1980 TO 2000

<u>1980</u> 7 Guidelines	<u>1985</u> 7 Guidelines	<u>1990</u> 7 Guidelines	<u>1995</u> 7 Guidelines	<u>2000</u> 10 Guidelines, clustered into 3 groups	
Eat a variety of foods	Eat a variety of foods	Eat a variety of foods	Eat a variety of foods		
Maintain ideal weight	Maintain desirable weight	Maintain healthy weight	Balance the food you eat with physical activity —maintain or improve your weight	Aim for a healthy weight	Aim for Fitness
				Be physically active each day	
Avoid too much fat, saturated fat, and cholesterol	Avoid too much fat, saturated fat, and cholesterol	Choose a diet low in fat, saturated fat and cholesterol		Let the Pyramid guide your food choices	Build a Healthy Base
Eat foods with adequate starch and fiber	Eat foods with adequate starch and fiber	Choose a diet with plenty of vegetables, fruits and grain projects	Choose a diet with plenty of grain products, vegetables, and fruits	Choose a variety of grains daily, especially whole grains	
				Choose a variety of fruits and vegetables daily	
				Keep food safe to eat	
			Choose a diet low in fat, saturated fat and cholesterol	Choose a diet that is low in saturated fat and cholesterol and moderate in total fat	Choose Sensibly
Avoid too much sugar	Avoid too much sugar	Use sugars only in moderation	Choose a diet moderate in sugars	Choose beverages and foods to moderate your intake of sugars	
Avoid too much sodium	Avoid too much sodium	Use salt and sodium only in moderation	Choose a diet moderate in salt and sodium	Choose and prepare foods with less salt	
If you drink alcohol, do so in moderation	If you drink alcoholic beverages, do so in moderation	If you drink alcoholic beverages, do so in moderation	If you drink alcoholic beverages, do so in moderation	If you drink alcoholic beverages, do so in moderation	

Shading indicates how the order in which the guidelines are presented has changed over time.

PART 3

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