

TECHNICAL ASSISTANCE memorandum



NEW YORK STATE OFFICE FOR THE AGING
Bldg. 2, Empire State Plaza, Albany, NY 12223-0001

TO: AREA AGENCY ON AGING DIRECTORS
 Nutrition Program Directors

Subject:
Menu Planning Guidelines

Response Due Date:

No: 89-TAM-7	Date: 8/1/89
Programs Affected:	
<input type="checkbox"/> III-B <input checked="" type="checkbox"/> III-C-1 <input checked="" type="checkbox"/> III-C-2 <input type="checkbox"/> III-D <input checked="" type="checkbox"/> SNAP <input checked="" type="checkbox"/> CSE <input type="checkbox"/> ELSEP <input type="checkbox"/> EPIC <input type="checkbox"/> RFE <input type="checkbox"/> HEAP <input type="checkbox"/> OTHER:	
Contact Person(s) - Phone Number(s)	
Nutrition Unit 518-474-4576 212-804-1676	
For Your Information Consulting/Staff Dietitians	
TAM Superseded by this document:	

The purpose of this Technical Assistance Memorandum (TAM) is to provide additional guidance to consulting dietitians and nutrition program staff concerning menu planning procedures and requirements.

This TAM reviews a number of nutrition program standards currently in effect as well as recommended practices established in recent years.

Highlights of this TAM include:

1. Suggested approaches to meeting the current Dietary Guidelines
2. Flexible menu planning when nutrient content is confirmed by analysis
3. Methods to confirm the nutrient content of meals
4. Attachments
 - a. Menu Planning Guidelines
 - b. Revised Nutrient Standard Method Units (Table)
 - c. 1980 Revised Recommended Dietary Allowances (Table)
 - d. Guidelines for Menus Planning (Excerpt from the New York City Department for the Aging program Manual)

Contact the Nutrition Unit at SOFA for additional information. The attachments (3 copies) will be provided to the AAA only. Please distribute this information to appropriate nutrition program staff.

MENU PLANNING

1. (Standard) The nutrition services provider provides menus, where feasible and appropriate to meet the particular dietary needs and preferences arising from the health requirements, religious requirements, or ethnic backgrounds of eligible individuals.
 - a) Participants' comments on meals should be routinely solicited and considered when planning menus. This can be accomplished by conducting an annual survey of food preferences and menu satisfaction and obtaining feedback from the site or nutrition advisory council.
 - b) Programs serving populations which observe religious dietary restrictions should provide meals which comply with the restrictions if feasible within the programs operation and budget.
 - c) Programs serving ethnic populations should provide meals which reflect their preferences if feasible within the programs operation and budget. Resources for ethnic menus are available from SOFA and the NPE network.
2. (Standard). Menus should be planned based on recommendations contained in the current Dietary Guidelines entitled "Nutrition and Your Health--Dietary Guidelines for Americans." The guidelines encourage the incorporation of adequate starch and fiber, and avoidance of too much fat, cholesterol, sugar and salt.
 - a) Current research has yet to establish a specific amount and type of fiber to provide in the general diet. However, a good source of fiber should be included daily.
 - b) The American Heart Association's guidelines suggest that no more than 30% of the total daily calories come from fats (of which saturated fats contribute 10% or less), carbohydrates provide 50% of the calories and the remaining 20% are calories from protein.
 - c) The National Research Council suggests that a "safe and adequate" sodium intake per day is about 1100 to 3300 mg. for an adult. However, a satisfactory approach would be to limit sodium in the general diet to 1000 - 1500 mg. per meal.
 - d) Foods high in sucrose generally have a low nutrient density yet are high in calories. Therefore, they should be used in moderation.
3. The Meal Pattern below provides the basic format for planning meals. However, it does not ensure nutritional adequacy and is not a substitute for analysis. Menus should generally follow this pattern but may deviate provided that nutrition requirements are met (as confirmed by analysis) and participant

satisfaction is maintained. For example, a serving of stew may contain only 2 ounces of meat if the total meal provides adequate protein and other nutrients.

MEAL PATTERN

Meat, fish, poultry or alternate	- 3 oz. edible portion
Vegetables and fruits	2-1/2 cup servings*
Whole grain or enriched bread	one serving
Butter or fortified margarine	one teaspoon
Dessert	1/2 cup**
Milk, whole, 1%, 2%, skim	1/2 pint

*All vegetables and full strength vegetable juices, all fruit and full strength juices must include one good source of Vitamin C daily and three good sources of Vitamin A per week.

**Desserts such as fresh or canned fruit, milk puddings, custard, ice cream, ice milk, sherbet, cookies should be offered more frequently than cakes or pies.

4. (Standard) Cycle menus must be planned for a minimum of 4-6 weeks.
 - o A cycle menu can incorporate a number of different food items for a particular season when various fresh fruits and vegetables are more readily available or when certain menu items are more desirable.
5. (Standard). Menus must be planned and meals served to be palatable, attractive and easy to consume.
 - o Include foods of different textures and preparation methods with appealing flavor and color combinations..
6. Menu items are evaluated to ensure their suitability to program operations.
 - a) Fit into the production schedule
 - b) Food cost are reasonable
 - c) Foods can be prepared using existing equipment and staff
 - d) Food items can be held and transported with minimal loss in quality
7. (Standard) All main meals are hot or designed to be eaten hot (frozen, canned foods) except during June, July and August when two main meals per week may be cold, e.g., soup and sandwich, salad plate.
8. Frozen meals or emergency meal packages should be planned to meet nutritional requirements as described below in order to be eligible for USDA commodity and/or cash support.

- o Emergency meal packages should contain shelf stable foods which require little or no cooking or minimal preparation.
9. (Standard) Standardized quantity recipes, adjusted to yield the number of servings needed must be used in order to produce meal items of consistent quality, cost and nutrient value.
 10. Resources for foods providing a good source of a specific nutrient include the Nutrient Standard Method Guide and 82-TAM-III-C-7, Vitamin Checklist, 9/23/82.

NUTRIENT CONTENT

1. (Standard) Each meal must contain at least one third of the current Recommended Dietary Allowance (RDA) as established by the Food and Nutrition Board -- National Research Council, National Academy of Science (Older Americans Act, 1965 as amended).
 - o See Table I 1980 RDA Current Guidelines
2. (Standard) When two meals are served on the same day for consumption by the same individual, the combined nutrient content of the two meals must provide two-thirds the Recommended Dietary Allowance.
3. Nutrients to be confirmed: Calories, Fat, Protein Vitamin A, Vitamin C, Thiamine, Riboflavin, Niacin, Calcium, Iron and Phosphorus.
4. Confirmation of the nutrient content of meals can be accomplished by using the Nutrient Standard Method (see revised requirements/units), computer nutrient analysis software or nutrient analysis resources such as Handbook 456. Note that adherence to the meal pattern (page 2) does not supplant the requirement for menus to be analyzed unless a waiver is granted by SOFA.
5. Therapeutic diets prescribed by a physician should be planned to provide as close to the Recommended Dietary Allowances as possible. However, if it is necessary to limit certain elements of the diet such as calories, protein, etc. and as a result the meal(s) does not meet the nutritional requirements of the program such requirements will be waived.
6. (Standard) Menus are approved in writing by the Area Agency on Aging registered dietitian, or by the registered dietitian whose services are utilized by the provider to meet nutritional requirements.
 - a) (Standard) All food must be clearly identified on the menu to enable accurate determination of nutrient content.

- b) (Standard) Menu substitutions must be approved by the registered dietitian. When the approved and certified menu is altered, it must be documented and initialed on the official copy. Substitutions must be of equal nutritive value.
- c) (Standard) Menus not certified at the local level must be submitted to the State Office for the Aging at least six weeks prior to the first serving day. SOFA nutritionist will then evaluate, recommend any changes and certify menus.
7. (Standard) Menus on file must document what was actually served including all frozen and/or emergency meals provided. These menus must be kept by the nutrition provider for a period of one year from the last serving date.

NUTRIENT STANDARD METHOD

Revised nutrient value units based on the 1980 Recommended Dietary Allowance for a male 51 years or older.

	100% RDA	33% RDA	Nutrient value/ unit	Units/meal
Calories	2000-2800	800	76	10.5
Protein	56	18.7	2.1	8.9
Vit. A				
ret eg.	1000	333		
IU	5000	1666.7	179	9.3
Vit. C mg.	60	20	2	10.0
Thiamine mg.	1.2	.4	.04	10.0
Riboflavin mg.	1.4	.47	.05	9.4
Niacin mg.	16	5.3	.53	10.0
Calcium mg.	800-1000	300	35.6	8.4
Phosphorus mg.	800	266.7	35.6	7.5
Iron mg.	10	3.3	.44	7.5

Dietary Reference Intakes (DRI)

The Dietary Reference Intakes (DRI) include two sets of values that serve as goals for nutrient intake—Recommended Dietary Allowances (RDA) and Adequate Intakes (AI). The RDA reflect the average daily amount of a nutrient considered adequate to meet the needs of most healthy people. If there is insufficient evidence to determine an RDA, an AI is set. AI are more tentative than RDA, but both may be used as goals for nutrient intakes. In addition to the values that serve as goals for nutrient intakes (presented in the tables on these two pages), the DRI include a set of values called Tolerable Upper Intake Levels (UL). The UL represent the maximum amount of a nutrient that appears safe for most healthy people to consume on a regular basis. Turn the page for a listing of the UL for selected vitamins and minerals.

Estimated Energy Requirements (EER), Recommended Dietary Allowances (RDA), and Adequate Intakes (AI) for Water, Energy, and the Energy Nutrients

Age ^a	Reference BMI (kg/m ²)	Reference height, cm (in)	Reference weight, kg (lb)	Water ^b AI (L/day)	Energy EER ^c (kcal/day)	Carbohydrate RDA (g/day)	Total fiber AI (g/day)	Total fat AI (g/day)	Linoleic acid ^e AI (g/day)	Linolenic acid ^e AI (g/day)	Protein RDA (g/day) ^d	Protein RDA (g/kg/day) ^d
Infants												
0-6 mo	—	62 (24)	6 (13)	0.7 ^b	570	60	—	31	4.4	0.5	9.1	1.52
6-12 mo	—	71 (28)	9 (20)	0.8 ^b	743	95	—	30	4.6	0.5	13.5	1.5
Children												
1-3	—	86 (34)	12 (27)	1.3	1046	130	19	—	7	0.7	13	1.1
4-6	15.3	115 (45)	20 (44)	1.7	1742	130	25	—	10	0.9	19	0.95
7-9	17.2	144 (57)	36 (79)	2.4	2279	130	31	—	12	1.2	34	0.95
10-13	20.5	174 (68)	61 (134)	3.3	3152 ^b	130	38	—	16	1.6	52	0.85
14-18	22.5	177 (70)	70 (154)	3.7	3067 ^b	130	38	—	17	1.6	56	0.8
19-30				3.7	3067 ^b	130	38	—	17	1.6	56	0.8
>30				3.7	3067 ^b	130	30	—	14	1.6	56	0.8
Adults												
0-1	—	62 (24)	6 (13)	0.7 ^b	520	60	—	31	4.4	0.5	9.1	1.52
1-3	—	71 (28)	9 (20)	0.8 ^b	676	95	—	30	4.6	0.5	13.5	1.5
4-6	15.3	115 (45)	20 (44)	1.7	1642	130	25	—	10	0.9	19	0.95
7-9	17.2	144 (57)	37 (81)	2.1	2071	130	26	—	10	1.0	34	0.95
10-13	20.4	163 (64)	54 (119)	2.3	2368	130	26	—	11	1.1	46	0.85
14-18	21.5	163 (64)	57 (126)	2.7	2403 ^b	130	25	—	12	1.1	46	0.8
19-30				2.7	2403 ^b	130	21	—	12	1.1	46	0.8
>30				2.7	2403 ^b	130	21	—	11	1.1	46	0.8
Pregnant												
1st trimester				3.0	+0	175	28	—	13	1.4	+25	1.1
2nd trimester				3.0	+340	175	28	—	13	1.4	+25	1.1
3rd trimester				3.0	+452	175	28	—	13	1.4	+25	1.1
Lactating												
1st 6 months				3.8	+330	210	29	—	13	1.3	+25	1.1
2nd 6 months				3.8	+400	210	29	—	13	1.3	+25	1.1

NOTE: For all nutrients, values for infants are AI. Dashes indicate that values have not been determined.

^aThe water AI includes drinking water, water in beverages, and water in foods. In general, drinking water and other beverages contribute about 70 to 80 percent, and foods, the remainder. Conversion factors: 1 L = 33.8 fluid oz; 1 L = 1.06 qt; 1 cup = 8 fluid oz.
^bThe Estimated Energy Requirement (EER) represents the average dietary energy intake that will maintain energy balance in a healthy person of a given gender, age, weight, height, and physical activity level. The values listed are based on an "active" person at the reference height and weight and at the midpoint ages for each group until age 19.

^cThe linolenic acid referred to in this table and text is the omega-3 fatty acid known as alpha-linolenic acid.

^dThe values listed are based on reference body weights.

^eAssumed to be from human milk.

^fAssumed to be from human milk and complementary foods and beverages. This includes approximately 0.6 L (~3 cups) as total fluid including formula, juices, and drinking water.

^gFor energy, the age groups for young children are 1-2 years and 3-8 years.

^hFor males, subtract 10 kcalories per day for each year of age above 19.

ⁱFor females, subtract 7 kcalories per day for each year of age above 19.

SOURCE: Adapted from the Dietary Reference Intakes series, National Academies Press. Copyright 1997, 1998, 2000, 2001, 2002, 2004, by the National Academies of Sciences.

Dietary Reference Intakes (DRIs): Recommended Intakes for Individuals, Vitamins
Food and Nutrition Board, Institute of Medicine, National Academies

Life Stage Group	Vit A (µg/d) ^a	Vit C (mg/d)	Vit D (µg/d) ^{b,c}	Vit E (mg/d) ^d	Vit K (µg/d)	Thia- min (mg/d)	Ribo- flavin (mg/d)	Niacin (mg/d) ^e	Vit B ₆ (mg/d)	Folate (µg/d) ^f	Vit B ₁₂ (µg/d)	Panto- thenic Acid (mg/d)	Biotin (µg/d)	Choline ^g (mg/d)
Infants														
0-6 mo	400*	40*	5*	4*	2.0*	0.2*	0.3*	2*	0.1*	65*	0.4*	1.7*	5*	125*
7-12 mo	500*	50*	5*	5*	2.5*	0.3*	0.4*	4*	0.3*	80*	0.5*	1.8*	6*	150*
Children														
1-3 y	300	15	5*	6	30*	0.5	0.5	6	0.5	150	0.9	2*	8*	200*
4-8 y	400	25	5*	7	55*	0.6	0.6	8	0.6	200	1.2	3*	12*	250*
Males														
9-13 y	600	45	5*	11	60*	0.9	0.9	12	1.0	300	1.8	4*	20*	375*
14-18 y	900	75	5*	15	75*	1.2	1.3	16	1.3	400	2.4	5*	25*	550*
19-30 y	900	90	5*	15	120*	1.2	1.3	16	1.3	400	2.4	5*	30*	550*
31-50 y	900	90	5*	15	120*	1.2	1.3	16	1.3	400	2.4	5*	30*	550*
51-70 y	900	90	10*	15	120*	1.2	1.3	16	1.7	400	2.4 ^h	5*	30*	550*
> 70 y	900	90	15*	15	120*	1.2	1.3	16	1.7	400	2.4 ^h	5*	30*	550*
Females														
9-13 y	600	45	5*	11	60*	0.9	0.9	12	1.0	300	1.8	4*	20*	375*
14-18 y	700	65	5*	15	75*	1.0	1.0	14	1.2	400 ⁱ	2.4	5*	25*	400*
19-30 y	700	75	5*	15	90*	1.1	1.1	14	1.3	400 ⁱ	2.4	5*	30*	425*
31-50 y	700	75	5*	15	90*	1.1	1.1	14	1.3	400 ⁱ	2.4	5*	30*	425*
51-70 y	700	75	10*	15	90*	1.1	1.1	14	1.5	400	2.4 ^h	5*	30*	425*
> 70 y	700	75	15*	15	90*	1.1	1.1	14	1.5	400	2.4 ^h	5*	30*	425*
Pregnancy														
14-18 y	750	80	5*	15	75*	1.4	1.4	18	1.9	600 ^j	2.6	6*	30*	450*
19-30 y	770	85	5*	15	90*	1.4	1.4	18	1.9	600 ^j	2.6	6*	30*	450*
31-50 y	770	85	5*	15	90*	1.4	1.4	18	1.9	600 ^j	2.6	6*	30*	450*
Lactation														
14-18 y	1,200	115	5*	19	75*	1.4	1.6	17	2.0	500	2.8	7*	35*	550*
19-30 y	1,300	120	5*	19	90*	1.4	1.6	17	2.0	500	2.8	7*	35*	550*
31-50 y	1,300	120	5*	19	90*	1.4	1.6	17	2.0	500	2.8	7*	35*	550*

NOTE: This table (taken from the DRI reports, see www.nap.edu) presents Recommended Dietary Allowances (RDAs) in bold type and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). RDAs and AIs may both be used as goals for individual intake. RDAs are set to meet the needs of almost all (97 to 98 percent) individuals in a group. For healthy breastfed infants, the AI is the mean intake. The AI for other life stage and gender groups is believed to cover needs of all individuals in the group, but lack of data or uncertainty in the data prevent being able to specify with confidence the percentage of individuals covered by this intake.

^aAs retinol activity equivalents (RAEs). 1 RAE = 1 µg retinol, 12 µg β-carotene, 24 µg β-cryptoxanthin. The RAE for dietary provitamin A carotenoids is twofold greater than retinol equivalents (RE), whereas the RAE for preformed vitamin A is the same as RE.

^bAs cholecalciferol. 1 µg cholecalciferol = 40 IU vitamin D.

^cIn the absence of adequate exposure to sunlight.

^dAs α-tocopherol. α-Tocopherol includes RRR-α-tocopherol, the only form of α-tocopherol that occurs naturally in foods, and the 2R-stereoisomeric forms of α-tocopherol (RRR-, RSR-, RRS-, and RSS-α-tocopherol) that occur in fortified foods and supplements. It does not include the 2S-stereoisomeric forms of α-tocopherol (SRR-, SSR-, SRS-, and SSS-α-tocopherol), also found in fortified foods and supplements.

^eAs niacin equivalents (NE). 1 mg of niacin = 60 mg of tryptophan; 0-6 months = preformed niacin (not NE).

^fAs dietary folate equivalents (DFE). 1 DFE = 1 µg food folate = 0.6 µg of folic acid from fortified food or as a supplement consumed with food = 0.5 µg of a supplement taken on an empty stomach.

^gAlthough AIs have been set for choline, there are few data to assess whether a dietary supply of choline is needed at all stages of the life cycle, and it may be that the choline requirement can be met by endogenous synthesis at some of these stages.

^hBecause 10 to 30 percent of older people may malabsorb food-bound B₁₂, it is advisable for those older than 50 years to meet their RDA mainly by consuming foods fortified with B₁₂ or a supplement containing B₁₂.

ⁱIn view of evidence linking folate intake with neural tube defects in the fetus, it is recommended that all women capable of becoming pregnant consume 400 µg from supplements or fortified foods in addition to intake of food folate from a varied diet.

^jIt is assumed that women will continue consuming 400 µg from supplements or fortified food until their pregnancy is confirmed and they enter prenatal care, which ordinarily occurs after the end of the periconceptional period—the critical time for formation of the neural tube.

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Dietary Reference Intakes (DRIs): Recommended Intakes for Individuals, Elements
Food and Nutrition Board, Institute of Medicine, National Academies

Life Stage Group	Calcium (mg/d)	Chromium (µg/d)	Copper (µg/d)	Fluoride (mg/d)	Iodine (µg/d)	Iron (mg/d)	Magnesium (mg/d)	Manganese (mg/d)	Molybdenum (µg/d)	Phosphorus (mg/d)	Selenium (µg/d)	Zinc (mg/d)	Potassium (g/d)	Sodium (g/d)	Chloride (g/d)	
<i>Infants</i>																
0-6 mo	210*	0.2*	200*	0.01*	110*	0.27*	30*	0.003*	2*	100*	15*	2*	0.4*	0.12*	0.18*	
7-12 mo	270*	5.5*	220*	0.5*	130*	11	75*	0.6*	3*	275*	20*	3	0.7*	0.37*	0.57*	
<i>Children</i>																
1-3 y	500*	11*	340	0.7*	90	7	80	1.2*	17	460	20	3	3.0*	1.0*	1.5*	
4-8 y	800*	15*	440	1*	90	10	130	1.5*	22	500	30	5	3.8*	1.2*	1.9*	
<i>Males</i>																
9-13 y	1,300*	25*	700	2*	120	8	240	1.9*	34	1,250	40	8	4.5*	1.5*	2.3*	
14-18 y	1,300*	35*	890	3*	150	11	410	2.2*	43	1,250	55	11	4.7*	1.5*	2.3*	
19-30 y	1,000*	35*	900	4*	150	8	400	2.3*	45	700	55	11	4.7*	1.5*	2.3*	
31-50 y	1,000*	35*	900	4*	150	8	420	2.3*	45	700	55	11	4.7*	1.5*	2.3*	
51-70 y	1,200*	30*	900	4*	150	8	420	2.3*	45	700	55	11	4.7*	1.5*	2.3*	
> 70 y	1,200*	30*	900	4*	150	8	420	2.3*	45	700	55	11	4.7*	1.3*	2.0*	
<i>Females</i>																
9-13 y	1,300*	21*	700	2*	120	8	240	1.6*	34	1,250	40	8	4.5*	1.5*	2.3*	
14-18 y	1,300*	24*	890	3*	150	15	360	1.6*	43	1,250	55	9	4.7*	1.5*	2.3*	
19-30 y	1,000*	25*	900	3*	150	18	310	1.8*	45	700	55	8	4.7*	1.5*	2.3*	
31-50 y	1,000*	25*	900	3*	150	18	320	1.8*	45	700	55	8	4.7*	1.5*	2.3*	
51-70 y	1,200*	20*	900	3*	150	8	320	1.8*	45	700	55	8	4.7*	1.3*	2.0*	
> 70 y	1,200*	20*	900	3*	150	8	320	1.8*	45	700	55	8	4.7*	1.2*	1.8*	
<i>Pregnancy</i>																
14-18 y	1,300*	29*	1,000	3*	220	27	400	2.0*	50	1,250	60	12	4.7*	1.5*	2.3*	
19-30 y	1,000*	30*	1,000	3*	220	27	350	2.0*	50	700	60	11	4.7*	1.5*	2.3*	
31-50 y	1,000*	30*	1,000	3*	220	27	360	2.0*	50	700	60	11	4.7*	1.5*	2.3*	
<i>Lactation</i>																
14-18 y	1,300*	44*	1,300	3*	290	10	360	2.6*	50	1,250	70	13	5.1*	1.5*	2.3*	
19-30 y	1,000*	45*	1,300	3*	290	9	310	2.6*	50	700	70	12	5.1*	1.5*	2.3*	
31-50 y	1,000*	45*	1,300	3*	290	9	320	2.6*	50	700	70	12	5.1*	1.5*	2.3*	

NOTE: This table presents Recommended Dietary Allowances (RDAs) in **bold type** and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). RDAs and AIs may both be used as goals for individual intake. RDAs are set to meet the needs of almost all (97 to 98 percent) individuals in a group. For healthy breastfed infants, the AI is the mean intake. The AI for other life stages and gender groups is believed to cover needs of all individuals in the group, but lack of data or uncertainty in the data prevent being able to specify with confidence the percentage of individuals covered by this intake.

SOURCES: *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride* (1997); *Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B₆, Folate, Vitamin B₁₂, Pantothenic Acid, Biotin, and Choline* (1998); *Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids* (2000); *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc* (2001); and *Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate* (2004). These reports may be accessed via <http://www.nap.edu>.

Dietary Reference Intakes (DRIs): Estimated Average Requirements for Groups Food and Nutrition Board, Institute of Medicine, National Academies

Life Stage Group	CHO (g/d)	Protein (g/d) ^y	Vit A (μg/d) ^z	Vit C (mg/d)	Vit E (mg/d) ^z	Thiamin (mg/d)	Riboflavin (mg/d)	Niacin (mg/d) ^y	Vit B ₆ (mg/d)	Folate (μg/d) ^z	Vit B ₁₂ (μg/d)	Copper (μg/d)	Iodine (μg/d)	Iron (mg/d)	Magnesium (mg/d)	Molybdenum (μg/d)	Phosphorus (mg/d)	Selenium (μg/d)	Zinc (mg/d)	
Infants																				
7-12 mo		9*																		
Children																				
1-3 y	100	11	210	13	5	0.4	0.4	5	0.4	120	0.7	260	65	6.9	65	13	380	17	2.5	
4-8 y	100	15	275	22	6	0.5	0.5	6	0.5	160	1.0	340	65	3.0	110	17	405	23	2.5	
Males																				
9-13 y	100	27	445	39	9	0.7	0.8	9	0.8	250	1.5	540	73	5.9	200	26	1,055	35	7.0	
14-18 y	100	44	630	63	12	1.0	1.1	12	1.1	330	2.0	685	95	7.7	340	33	1,055	45	8.5	
19-30 y	100	46	625	75	12	1.0	1.1	12	1.1	320	2.0	700	95	6	330	34	580	45	9.4	
31-50 y	100	46	625	75	12	1.0	1.1	12	1.1	320	2.0	700	95	6	350	34	580	45	9.4	
51-70 y	100	46	625	75	12	1.0	1.1	12	1.4	320	2.0	700	95	6	350	34	580	45	9.4	
> 70 y	100	46	625	75	12	1.0	1.1	12	1.4	320	2.0	700	95	6	350	34	580	45	9.4	
Females																				
9-13 y	100	28	420	39	9	0.7	0.8	9	0.8	250	1.5	540	73	5.7	200	26	1,055	35	7.0	
14-18 y	100	38	485	56	12	0.9	0.9	11	1.0	330	2.0	685	95	7.9	300	33	1,055	45	7.3	
19-30 y	100	38	500	60	12	0.9	0.9	11	1.1	320	2.0	700	95	8.1	255	34	580	45	6.8	
31-50 y	100	38	500	60	12	0.9	0.9	11	1.1	320	2.0	700	95	8.1	265	34	580	45	6.8	
51-70 y	100	38	500	60	12	0.9	0.9	11	1.3	320	2.0	700	95	5	265	34	580	45	6.8	
> 70 y	100	38	500	60	12	0.9	0.9	11	1.3	320	2.0	700	95	5	265	34	580	45	6.8	
Pregnancy																				
14-18 y	135	50	530	66	12	1.2	1.2	14	1.6	520	2.2	785	160	23	335	40	1,055	49	10.5	
19-30 y	135	50	550	70	12	1.2	1.2	14	1.6	520	2.2	800	160	22	290	40	580	49	9.5	
31-50 y	135	50	550	70	12	1.2	1.2	14	1.6	520	2.2	800	160	22	300	40	580	49	9.5	
Lactation																				
14-18 y	160	60	885	96	16	1.2	1.3	13	1.7	450	2.4	985	209	7	300	35	1,055	59	10.9	
19-30 y	160	60	900	100	16	1.2	1.3	13	1.7	450	2.4	1,000	209	6.5	255	36	580	59	10.4	
31-50 y	160	60	900	100	16	1.2	1.3	13	1.7	450	2.4	1,000	209	6.5	265	36	580	59	10.4	

NOTE: This table presents Estimated Average Requirements (EARs), which serve two purposes: for assessing adequacy of population intakes, and as the basis for calculating Recommended Dietary Allowances (RDAs) for individuals for those nutrients. EARs have not been established for vitamin D, vitamin K, pantothenic acid, biotin, choline, calcium, chromium, fluoride, manganese, or other nutrients not yet evaluated via the DRI process. For individual at reference weight (Table 1-1). *Indicates change from prepublication copy due to calculation error.

^y as retinol activity equivalents (RAEs). 1 RAE = 1 μg retinol, 12 μg β-carotene, or 24 μg α-carotene, or 24 μg β-cryptoxanthin. The RAE for dietary provitamin A carotenoids is two-fold greater than retinol equivalents (RE), whereas the RAE for preformed vitamin A is the same as RE.

^z α-tocopherol. α-Tocopherol includes RRR-α-tocopherol, the only form of α-tocopherol that occurs naturally in foods, and the 2R-stereoisomeric forms of α-tocopherol (RRR-, RSR-, RRS-, and RSS-α-tocopherol) that occur in fortified foods and supplements. It does not include the 2S-stereoisomeric forms of α-tocopherol (SRR-, SSR-, SRS-, and SSS-α-tocopherol), also found in fortified foods and supplements.

^z niacin equivalents (NE). 1 mg of niacin = 60 mg of tryptophan.

^z dietary folate equivalents (DFE). 1 DFE = 1 μg food folate = 0.6 μg of folic acid from fortified food or as a supplement consumed with food = 0.5 μg of a supplement taken on an empty stomach.

SOURCES: Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride (1997); Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B₆, Folate, Vitamin B₁₂, Pantothenic Acid, Vitamin C, Vitamin E, Selenium, and Carotenoids (2000); Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc (2001), and Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids (2002). These reports may be accessed via www.nap.edu.

Dietary Reference Intakes (DRIs): Recommended Intakes for Individuals, Macronutrients
Food and Nutrition Board, Institute of Medicine, National Academies

Life Stage Group	Total Water ^a (L/d)	Carbohydrate (g/d)	Total Fiber (g/d)	Fat (g/d)	Linoleic Acid (g/d)	α -Linolenic Acid (g/d)	Protein ^b (g/d)
<i>Infants</i>							
0-6 mo	0.7*	60*	ND	31*	4.4*	0.5*	9.1*
7-12 mo	0.8*	95*	ND	30*	4.6*	0.5*	11.0 ^c
<i>Children</i>							
1-3 y	1.3*	130	19*	ND	7*	0.7*	13
4-8 y	1.7*	130	25*	ND	10*	0.9*	19
<i>Males</i>							
9-13 y	2.4*	130	31*	ND	12*	1.2*	34
14-18 y	3.3*	130	38*	ND	16*	1.6*	52
19-30 y	3.7*	130	38*	ND	17*	1.6*	56
31-50 y	3.7*	130	38*	ND	17*	1.6*	56
51-70 y	3.7*	130	30*	ND	14*	1.6*	56
> 70 y	3.7*	130	30*	ND	14*	1.6*	56
<i>Females</i>							
9-13 y	2.1*	130	26*	ND	10*	1.0*	34
14-18 y	2.3*	130	26*	ND	11*	1.1*	46
19-30 y	2.7*	130	25*	ND	12*	1.1*	46
31-50 y	2.7*	130	25*	ND	12*	1.1*	46
51-70 y	2.7*	130	21*	ND	11*	1.1*	46
> 70 y	2.7*	130	21*	ND	11*	1.1*	46
<i>Pregnancy</i>							
14-18 y	3.0*	175	28*	ND	13*	1.4*	71
19-30 y	3.0*	175	28*	ND	13*	1.4*	71
31-50 y	3.0*	175	28*	ND	13*	1.4*	71
<i>Lactation</i>							
14-18 y	3.8*	210	29*	ND	13*	1.3*	71
19-30 y	3.8*	210	29*	ND	13*	1.3*	71
31-50 y	3.8*	210	29*	ND	13*	1.3*	71

NOTE: This table presents Recommended Dietary Allowances (RDAs) in bold type and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). RDAs and AIs may both be used as goals for individual intake. RDAs are set to meet the needs of almost all (97 to 98 percent) individuals in a group. For healthy infants fed human milk, the AI is the mean intake. The AI for other life stage and gender groups is believed to cover the needs of all individuals in the group, but lack of data or uncertainty in the data prevent being able to specify with confidence the percentage of individuals covered by this intake.

^a Total water includes all water contained in food, beverages, and drinking water.

^b Based on 0.8 g/kg body weight for the reference body weight.

^c Change from 13.5 in prepublication copy due to calculation error.

Dietary Reference Intakes (DRIs): Additional Macronutrient Recommendations
Food and Nutrition Board, Institute of Medicine, National Academies

Macronutrient	Recommendation
Dietary cholesterol	As low as possible while consuming a nutritionally adequate diet
Trans fatty acids	As low as possible while consuming a nutritionally adequate diet
Saturated fatty acids	As low as possible while consuming a nutritionally adequate diet
Added sugars	Limit to no more than 25% of total energy

SOURCE: *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids* (2002).

**Dietary Reference Intakes (DRIs): Estimated Energy Requirements (EER) for Men and Women
30 Years of Age^a**

Food and Nutrition Board, Institute of Medicine, National Academies

Height (m [in])	PAL ^b	Weight for BMI ^c of 18.5 kg/m ² (kg [lb])	Weight for BMI ^c of 24.99 kg/m ² (kg [lb])	EER, Men ^d (kcal/day)		EER, Women ^d (kcal/day)	
				BMI of 18.5 kg/m ²	BMI of 24.99 kg/m ²	BMI of 18.5 kg/m ²	BMI of 24.99 kg/m ²
1.50 (59)	Sedentary	41.6 (92)	56.2 (124)	1,848	2,080	1,625	1,762
	Low active			2,009	2,267	1,803	1,956
	Active			2,215	2,506	2,025	2,198
	Very active			2,554	2,898	2,291	2,489
1.65 (65)	Sedentary	50.4 (111)	68.0 (150)	2,068	2,349	1,816	1,982
	Low active			2,254	2,566	2,016	2,202
	Active			2,490	2,842	2,267	2,477
	Very active			2,880	3,296	2,567	2,807
1.80 (71)	Sedentary	59.9 (132)	81.0 (178)	2,301	2,635	2,015	2,211
	Low active			2,513	2,884	2,239	2,459
	Active			2,782	3,200	2,519	2,769
	Very active			3,225	3,720	2,855	3,141

^a For each year below 30, add 7 kcal/day for women and 10 kcal/day for men. For each year above 30, subtract 7 kcal/day for women and 10 kcal/day for men.

^b PAL = physical activity level.

^c BMI = body mass index.

^d Derived from the following regression equations based on doubly labeled water data:

Adult man: $EER = 662 - 9.53 \times \text{age (y)} + PA \times (15.91 \times \text{wt [kg]} + 539.6 \times \text{ht [m]})$

Adult woman: $EER = 354 - 6.91 \times \text{age (y)} + PA \times (9.36 \times \text{wt [kg]} + 726 \times \text{ht [m]})$

Where PA refers to coefficient for PAL

PAL = total energy expenditure ÷ basal energy expenditure

PA = 1.0 if PAL ≥ 1.0 < 1.4 (sedentary)

PA = 1.12 if PAL ≥ 1.4 < 1.6 (low active)

PA = 1.27 if PAL ≥ 1.6 < 1.9 (active)

PA = 1.45 if PAL ≥ 1.9 < 2.5 (very active)

Dietary Reference Intakes (DRIs): Acceptable Macronutrient Distribution Ranges

Food and Nutrition Board, Institute of Medicine, National Academies

Macronutrient	Range (percent of energy)		
	Children, 1-3 y	Children, 4-18 y	Adults
Fat	30-40	25-35	20-35
<i>n</i> -6 polyunsaturated fatty acids ^a (linoleic acid)	5-10	5-10	5-10
<i>n</i> -3 polyunsaturated fatty acids ^a (α-linolenic acid)	0.6-1.2	0.6-1.2	0.6-1.2
Carbohydrate	45-65	45-65	45-65
Protein	5-20	10-30	10-35

^a Approximately 10% of the total can come from longer-chain *n*-3 or *n*-6 fatty acids.

SOURCE: *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids* (2002).

II.B GUIDELINES FOR PLANNING MENUS

II.B.1. Main Dish

a. The main dish of meat or an alternate is the expedient way to meet the requirement for high quality protein. The serving must be three (3) ounces of cooked edible meat, fish, poultry, cheese or an alternate. Additional alternates are cooked dried beans, peas or nuts. Main dishes that combine vegetables, bread, and other fillers require larger portions to ensure that three ounces of protein are provided.*

a. Examples of meat or alternates without bone, skin, fillers or coatings are:

Roast beef slice	- 3.oz.
Roast turkey slice	- 3 oz.
Baked fish	- 3 oz.
Hard cheese	- 3 oz.

b. Examples of meat or alternates with bone, skin, fillers or coatings are:

Meat loaf (w/fillers)	- 4 oz.
Meat balls	- 4 oz.
Beef stew w/vegetables	- 3 oz. Beef & 1 cup vegetables
Chicken w/bone and skin (1/4 of 2 1/2 lb. chicken)	- 5-6 oz.
Chicken Chow Mein	- 3 oz. chicken & 1 cup vegetables
Turkey legs or wings	- 5-6 oz.
Short ribs	- 8 oz.
Oxtails	- 8 oz.
Stuffed peppers	- 3 oz. beef & 1 pepper
Fish and coating	- 4 oz.
Fish cakes	- 5 oz.
Baked ziti	- 6 oz. ricotta cheese & 1 cup macaroni
Macaroni and cheese	- 3 oz. hard cheese & 1 cup macaroni
Noodle kugel	- 6 oz. cottage cheese & 1 cup noodles
Frankfuters and Baked Beans	- 2 franks & 1/2 cup baked beans

*Recipes must be submitted for review to assigned nutrition consultant.

- b. Since the availability of any one specific fish is uncertain, simply indicate "Fish" as the entree item on any day when fish is to be served. A choice can be made closer to time of service depending on price and fish in season. Write in selected fish at that time.
- c. A hot main dish must be served daily. Cold meals are permissible once per week only during the months of June, July and August when temperatures are likely to be in the 90°'s.
- d. Sandwiches, hot or cold, when on the menu must contain 3 oz. of protein.
- e. A main mixed protein dish must itemize the amounts of each protein ingredient of the Menu Plan Form.

Examples:

- a. Baked macaroni and beef
 - 2 oz. beef
 - & 1 cup macaroni
 - & 1 oz. hard cheese
- b. Baked macaroni and cheese and Egg salad
 - 2 oz. cheese
 - 1 cup macaroni
 - 1 egg sliced
 - on lettuce
- c. Spaghetti with meat balls
 - 2 oz. beef
 - 1 oz. hard cheese
 - 1 cup spaghetti
- d. Chili con carne
 - 2 oz. beef
 - 1/2 cup kidney beans
- f. The serving of eggs* as a main dish is discouraged since they are a food easily prepared by the elderly even with limited culinary skills. Eggs are better reserved for eating at home for breakfast or for a simple evening meal. They can, however, be used to supplement main dishes that require additional protein.

Examples:

- a. Meat loaf with egg as a binder.
- b. Tuna casserole with sliced egg salad.
- c. Turkey a la king with sliced egg garnish.

*For centers that observe Kashruth, eggs are permitted for preparing dairy meals and should be in the form of omelets, cutlets and creamed eggs.

- g. Cured, smoked and pickled meats are high in sodium (salt), nitrates and nitrites. Therefore, these items must be limited to no more than two times per month.

Examples are: corned beef, frankfurters, sausages and pre-portioned frozen breaded veal and pork patties.

- h. Gravies and sauces may be served on occasion to add interest to meals. They provide mainly fat calories and little or no nutritional value.

II.B.2. Fruits And Vegetables

- a. A minimum of two (2) half cup servings of fresh, frozen or canned vegetables and fruit or other juices must be served daily. To the extent possible, fresh vegetables and fruits in season should be utilized. The serving of one cup of a vegetable, such as "one cup - Tossed Salad" does not fulfill this requirement.
- b. Four (4) oz. of juice or a half cup of fruit salad or an appetizer will be counted as one of two (2) half cup servings. Fruit served as Dessert must be counted only as Dessert and not as one of the two (2) half cups of Vegetables and Fruits. It can, however, fulfill a Vitamin A or C requirement.
- c. Two food items that are both high in starch should not be served together.

Examples:

Potato and lima beans
Potato and corn
Potato and rice

- d. A good source of Vitamin C is to be served daily. The best natural sources of this vitamin are oranges, grapefruits, tangerines, tomatoes, and their juices. All other natural juices must be enriched with Vitamin C. (See vitamin checklist on Page 23 for other suggestions.)

Drinks made from syrup-type concentrates, fruit punches and ades are not acceptable substitutes for natural juices.

- e. A source of Vitamin A is to be served three (3) times per week. The best natural sources of this nutrient are liver and the deep orange-colored vegetables such as carrots, sweet potato (yams), pumpkin and Hubbard

squash, and the green leafy vegetables like spinach, mustard and turnip greens, kale and broccoli. (See vitamin checklist on Page 23 for additional suggestions.) A half ($\frac{1}{2}$) cup is considered a serving.

- f. Fresh fruits and vegetables available by the season of the year. (See "What's in Season...When" on Page 32.)

II.B.3. Bread Alternates

- a. All pasta products (noodles, spaghetti, and macaroni) and rice are sources of carbohydrates or starch. For menu planning purposes they cannot take the place of vegetables.
- b. Although optional, these products add interest and variety to menus and help to round out a meal. Only enriched varieties should be purchased in order to contribute vitamins and minerals as well as calories.
- c. When a bread alternate is served, a $\frac{1}{2}$ cup serving is recommended.
- d. When a bread alternate is served, two $\frac{1}{2}$ cup servings of Vegetables and Fruits must still be served.

II.B.4. Bread and Their Substitutes

- a. One serving is required daily. Enriched and whole grain breads, biscuits, muffins, rolls and cornbread and/or other types add variety to the menu.

Examples:

Bread	- 1 slice
Cornbread (2" x 2")	- 1 square
Dinner roll	- 1 medium
Hamburger bun	- 1 bun

Substitutes should be enriched products.

II.B.5. Margarine or Butter

- a. One teaspoon is to be served daily.

- b. Either margarine or butter can be used. Margarines high in polyunsaturated fats such as corn, cottonseed, soybean and sunflower seed oils are the recommended choices. However, butter, though a saturated fat high in cholesterol, is usually a more flavorful choice and can also be used.

The cost per serving may determine the choice that is made.

II.B.6. Dessert

- a. A half ($\frac{1}{2}$) cup serving of dessert is to be provided daily.
- b. A fruit dessert two to three times per week is the preferred choice. Fruit may be either fresh when in season, frozen or canned. If fruit is used as a source of either Vitamins A or C, the fruit must be named, and not simply stated as "fruit."
- c. Fruits preserved in light syrup or fruit juice should be purchased. Avoid fruits packed in heavy syrup.
- d. Milk puddings, gelatin dessert with fruit, ice cream and/or an occasional baked dessert may also be served. Puddings should be prepared utilizing powdered skim milk or whole milk. Canned puddings are to be avoided. They contain many preservatives, are costly, and are not as tasty as the site-prepared puddings.
- e. A plain gelatin dessert has little or no nutritional value. Therefore, fresh and/or canned fruit and their juices should be added to make a more tasty and nutritious dessert.

II.B.7. Milk, Whole, Low Fat or Skim

- a. A half pint (8 oz.) of pasteurized milk is to be served daily.
- b. Participants should be provided with a choice of low fat, skim or whole milk.

- c. Milk must be served in unopened half pint containers as packaged at the milk processing plant.
- d. Drinking straws if provided for milk shall be enclosed in a wrapper or dispensed from a sanitary device. (NYC Health Code, Section 87.11a.) They shall be discarded immediately after use.
- e. Until ready to be served, milk must be held under refrigeration at 35° - 40° F.

II.B.8. Other Beverages

- a. Water must be readily available at meal times and throughout the day in clean water pitchers, from a fountain or water cooler, or some other potable water source. During water emergencies, pitchers of water can be placed where participants can help themselves to it.
- b. Coffee, decaffeinated beverages, tea, herbal teas and fruit-flavored drinks may be served as optional additional items as the food budget allows.
- c. Alcoholic beverages must not be provided with nutrition project funds.

II.B.9. Condiments

- a. Iodized salt should be purchased instead of the non-iodized. Iodine is an essential mineral needed for the proper functioning of the thyroid gland. It is lacking in foods grown in certain areas of the United States and therefore is added to salt as a condiment that is most frequently used to season food.
- b. Nutrition programs funds should not be used to purchase substitutes for salt and sugar. Most sugar substitutes are highly suspect as cancer-causing agents.

II.B.10. Optional Items

- a. Soup in any form is an optional item that can be included in a day's menu as long as the cost of food remains within budgeted limits. Unless prepared "from scratch", soups usually contribute an excess of salt to a population whose salt and sodium must be restricted.
- b. Vitamin and mineral supplements must not be provided with program funds.

II.C. PROCEDURES FOR DEVELOPING MENU PLANS

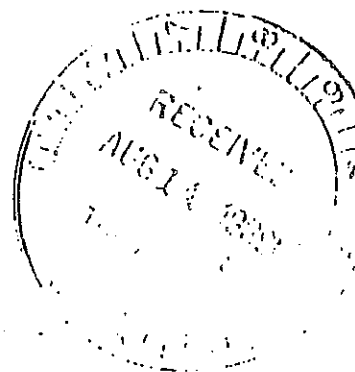
Using the project menu plan forms (6 - 7 weeks at a time) write the menu down as they are planned. The center's Menu Planning Committee should have a voice in the planning of these menus.

1. Select the main dish, a source of protein, which accounts for approximately 1/3 or more of the per meal cost.
2. Select the vegetables and fruits to complement the main dish.
3. Include the vitamin C food for each day. (See Vitamin A and C checklist on Page 23 of this chapter.)
4. Include the vitamin A foods for at least three (3) days each week.

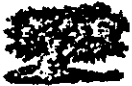
The nutrient requirements for Vitamins A & C can be met through servings of the required Vegetables and Fruits or the Dessert servings or the appetizer (if served).

5. Select the appetizer (when served).
6. Select rice, or type of pasta (noodles, spaghetti, macaroni) if needed to round out the meal.
7. Select the type of bread.
8. Include the table fat, either butter or margarine.
9. Select the dessert.
10. Include the required milk.
11. Other factors to consider:
 - a. Where feasible and appropriate, menus must consider the religious requirements and/or ethnic backgrounds of eligible individuals.
 - b. Meals must attempt to closely resemble a home prepared meal. They should be colorful and attractive in appearance.

- c. Salt, salty foods, saturated fats and highly seasoned foods must be avoided or limited.
- d. Current food costs, available kitchen staff and kitchen equipment availability and capacities need to be considered as well.
- e. The capabilities of the food service staff must also be considered.
- f. Where feasible and appropriate special menus shall be provided for meeting the particular dietary needs arising from health requirements. (See section on Special Diets which follows.)
- g. Include foods in season in the planning of menus.



TECHNICAL ASSISTANCE
memorandum



NEW YORK STATE OFFICE FOR THE AGING
Bldg. 2, Empire State Plaza, Albany, NY 12223-0001

TO: [x] AREA AGENCY ON AGING DIRECTORS [x] Nutrition Program Directors []		No: 89-TAM-8	Date: 8/29/89
Subject: Clarification of Menu Planning Guidelines (89-TAM-7)		Programs Affected: [] III-B [x] III-C-1 [x] III-C-2 [] III-D [x] SNAP [x] CSE [] EISEP [] EPIC [] RPE [] HEAP [] OTHER:	
Response Due Date:		Contact Person(s) - Phone Number(s) Nutrition Unit-(518)474-4576 -Albany (212)804-1663-NYC	
		For Your Information Consulting/Staff Nutritionists	
		TAM Superseded by this document:	

Menu Planning Guidelines (89-TAM-7) were recently distributed to all Area Agencies on Aging and included an excerpt from the New York City Department for the Aging (DFTA) Program Manual entitled "Guidelines for Menu Planning". Due to a number of inquiries it was necessary to clarify that the DFTA guidelines were included in the TAM only as an example, providing a general framework for the initial stages of menu planning. AAAs should refer to the SOFA guidelines included in 89-TAM-7 when planning menus and not the DFTA version which, although acceptable, may not be applicable to all programs.