West Virginia Bureau of Senior Services

OAA Title III Nutrition Services Operation Manual

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I. Purpose

A. Reduce Hunger, Food Insecurity and Reduce Waste

B. Promote Socialization

C. Promote Health and Well-being

D. Delay Adverse Health Conditions

II. Nutritional Requirements for Compliance

A. Meals shall comply with the most recent Dietary Guidelines for Americans (DGAs).
B. Monthly menus must be posted in a visible area within the congregate meal site.
C. Meals must contain:
    1. A minimum of 33 1/3 percent of the dietary reference intakes established by the Food and Nutrition Board of the Institute of Medicine of the National Academy of Science, for the provision of one meal daily (refer to table below).
    2. It is noted that when the dietary standards change and are published, the new values for Nutritional Goals and/or changes to Food Pattern Modeling guidelines, should be the basis for meal planning. Changes to either the Nutritional Goals and/or Food Pattern Modeling must be adopted within a reasonable amount of time, not to exceed one year after publication.
    3. Nutrition providers must provide six (6) festive meals featuring special holiday menus or meals featuring a special interest to older Americans. The nutrition provider may also provide special event meals such as picnics and field trips.
    4. DRI Requirements for providing one meal per day:

Table 1. Nutrition Goals

Applies to meal analysis

	Daily	Compliance Weekly Average
Calories (kcals)	1800-2600	600-850*
Carbohydrates (g/dl)	≤100	34-85
Dietary Fiber (g)	28g	≥7
Protein (g)	≥ 56	≥ 19*
Total Fat (g)	57-101	19-33
Saturated Fat (g)	15–28	5-9
Vitamin A (mcg)	≥ 625	≥ 208
Vitamin B12 (mcg)	≥2.0	≥ 0.67
Vitamin C (mg)	≥ 75	≥ 25
Vitamin D (mcg)	≥ 10	≥ 3.33
Calcium (mg)	≥ 1000	≥ 333
Folate (mcg)	≥ 320	≥ 106
Iron (mg)	≥ 6	≥ 2.0
Sodium (mg)	≤1500	≤1200

Nutrition Goals are set representing the highest DRI values to meet the requirements for persons from both 51-70 and 71+ years for vitamins and minerals.

The values for the Nutritional Goals provided in this table are excerpted from the Institute of Medicines, Dietary Reference Intakes: Estimated Average Requirements (EAR), Recommended Dietary Allowances (RDA), Adequate Intakes (AI), Tolerable Upper Intake Levels (UL) and Acceptable Macronutrient Distribution Range (AMDR).

Sodium amounts are 2300 mg/day recommended for older adults; AHA and CDCP recommend 1500 mg/day for persons older than 40 years of age.

*Calories and protein amount must hit the minimum amounts daily.

III. Meal Planning

A. Menus must follow one of the following methods:
   1. Nutrition Analysis Guidelines (Table 1. Nutrition Goals)
   2. Food Pattern Modeling Guidelines
B. Meals must comply with the Food Standards (see below).
C. Meals should be designed and suitable for persons with diabetes, heart disease, and hypertension.
D. If a cycle menu is utilized, there shall be at least 2 different menu sets per year (ie. Spring/Summer and Fall/Winter).
E. Participants must be solicited in the development of the menus as each individual site sees fit.

IV. Food Standards

A. All foods used shall be in conformance with the State guidelines for menu planning and the following specifications. Foods are subject to inspection by the Contractor, Area Agency on Aging, State Personnel, and the State Department of Agriculture.

B. The grade minimums recommended for food items are as follows:

1. Meat – Only those meats or meat products which are slaughtered, processed and manufactured in plants participating in the U.S. Department of Agriculture inspection program can be used.

   - Meats and meat products must bear the appropriate inspection seals and be sound, sanitary and free of objectionable odors or signs of deterioration upon delivery.
   - Meats for dry heat cooking shall be of Choice Grade, and those for moist heat cooking shall be of Good Grade or better.

2. Poultry and Seafood – When served as whole pieces, poultry and seafood shall be U.S. Grade A.

3. Eggs – U.S. Grade A; all eggs must be free from cracks. Dried, liquid or frozen eggs shall be pasteurized.

4. Fresh Fruits and Vegetables – Shall be of good quality (USDA #1), relatively free of bruises and defects.

5. Canned and Frozen Fruits and Vegetables – Grade C can be used in combination dishes, e.g., gelatins and soufflés.

6. Dairy Products, Cheeses – USDA Grade A – A variety of homogenized 2%, 1% or skim milk and buttermilk, all fortified with Vitamins A and D shall be offered.

7. Only commercially preserved foods may be used. No home-canned foods may be used.

C. Special meats for holidays and other events unique from the regular lunch in menu selection and/or style of service will be served on the days agreed upon.

D. Food, at all times, shall be prepared in a means that would maximize its palatability and appearance and maintain its nutritional value. Appropriate garnishes shall be provided.

E. Minimum portions (cooked weights or edible portions) that are equivalent to the required 3 ounce protein being served:

1. Roast meats, boneless chops, steaks, boneless turkey and cutlets – 3 oz.

2. Bone in chops, breaded meats or seafood – 4 oz.

3. Chicken with bone – 5 oz.

4. Chopped steaks, meatloaf – 3 oz.

5. Eggs – 1 large egg is equivalent to 1 oz. of protein requirement.

6. Dried beans, peas, lentils – ½ cup equal to 1 oz. of protein requirement (must be used in combination with whole grain products, egg, cheese, or meat product to complete the protein required).

Additional resource for edible portions

https://www.ars.usda.gov/ARSUserFiles/80400525/data/retn/usda_cookingyields_meatpoultry.pdf

NOTE: Combinations of protein foods can be used to serve the 3 oz. requirement.

F. Minimum portions and/or requirements:

7. Soup used as a vegetable must contain a minimum of 4 oz. of vegetables (drained weight).
8. Gelatin salad used as a fruit and/or vegetable must contain a minimum of 4 oz. of fruit and/or vegetable.
9. Instant mashed potatoes utilized for the vegetable requirements must be enriched with Vitamin C.
10. All grain products used must be enriched. Enriched whole grains are preferred.

V. Nutrition Analysis Guidelines – Menus:

A. Must meet the Nutritional Goals listed in Table 1. To provide flexibility and participant satisfaction, the goals can be met on a weekly average with the exception of calorie and protein in which both must be met daily.
B. Reviewed and determined acceptable in writing by a Registered Dietitian (RD or RDN).
C. Analyzed for nutritional adequacy to standards via computer assisted nutrient analysis software.
D. Must be kept on record for a minimum of 5 years.

VI. Food Pattern Modeling Basic Guidelines

A. Providers who choose not to complete a nutritional analysis of their menus will follow the food pattern model described in this section.
B. Planning meals using the food pattern modeling approach is considered to meet nutrient intake recommendations when the serving size and guidelines regarding food components are followed.
C. Food pattern modeling may be used as a tool to ensure food plate coverage and the appropriate types and amounts of foods are served.
D. When using the food pattern modeling approach, computerized nutrients analysis may be helpful but is not required. However, the provider must use an accepted method to control calories, saturated fat, carbohydrates, and sodium (see Food Preparation Recommendations).

E. Dietary Guidelines for Americans Key Recommendations

1. A healthy meal pattern includes:

    - A variety of vegetables from all subgroups – dark greens, red and orange, legumes (beans and peas), starchy and other (see Table 2).
    - Fruits, especially whole fruits
    - Grains, at least half which are to be whole grains
    - Fat-free or low-fat dairy, including milk, yogurt, cheese and/or fortified soy beverages
    - A variety of protein foods, including seafood, lean meats and poultry, eggs, legumes (beans and peas), nuts, seeds and soy products
    - Oils, include those from plants: canola, corn, olive, peanuts, safflower, soybean, and sunflower, Oils are naturally present in nuts, seeds, seafood, olives and avocados

2. A healthy eating pattern limits:

    - Saturated fats and trans fats, added sugars, and sodium

    Key Recommendations that are quantitative are provided for several components of the diet that should be limited. These components are of particular public health concern in the United States, and the specified limits can help individuals achieve healthy eating patterns within calorie limits:

    - Consume less than 10 percent of calories per day from added sugars
    - Consume less than 10 percent of calories per day from saturated fats
    - Consume less than 2,300 milligrams (mg) per day of sodium

F. Each meal must provide:

1. 1 serving of lean meat or meat alternate: 3 ounces of edible cooked meat, poultry, fish, eggs or meat alternate
2. 1-2 Serving(s) grain, bread or bread alternate: 1 ounce-equivalent, preferably whole grains, at a minimum half all grains served must be whole grains*
3. 2-3 Serving(s) vegetables: ½ cup-equivalent, may serve an additional vegetable instead of a fruit

4. 1-2 Serving(s) fruit: ½ cup-equivalent, may serve an additional fruit instead of a vegetable
5. 1 Serving of milk or milk alternate: 1 cup-equivalent
6. Margarine and desserts are optional and must be counted in the calories, fat and sodium totals, if served in addition to above components. Desserts are recommended to be incorporated into the menus.
7. No food component may be counted in two categories. Example: serving beans as a protein source cannot be counted as a vegetable.
   *Can be a weekly average

Table 2. – Vegetable Subgroups

Vegetable Subgroups	Examples
Dark-Green Vegetables	Broccoli, Spinach, Leafy Salad Greens, (Including Romaine Lettuce), Collards, Bok Choy, Kale, Turnip Greens, Mustard Greens, Green Herbs (Parsley, Cilantro)
Red & Orange	Tomatoes, Carrots, Tomato Juice, Sweet Potatoes, Red Peppers (Hot and Sweet), Winter Squash, Pumpkin
Legumes (Beans & Peas)	Pinto, White, Kidney, and Black Beans; Lentils: Chickpeas; Limas (Mature, Dried); Split Peas; Edamame (Green Soybeans)
Starchy Vegetables	Potatoes, Corn, Green Peas, Limas (Green, Immature), Plantains, Cassava
Other Vegetables	Lettuce (Iceberg), Onions, Green Beans, Cucumbers, Celery, Green Peppers, Cabbage, Mushrooms, Avocado, Summer Squash (Includes Zucchini), Cauliflower, Eggplant, Garlic, Bean Sprouts, Olives, Asparagus, Peapods (Snowpeas), Beets

VII. Food Component Requirements for Food Pattern Modeling

A. Meat or Meat Alternate

1. Three ounces (providing at least 19 g protein) of lean meat, poultry, fish, eggs or meat alternate shall be provided per meal.
2. Meat serving weight must be a 3 ounces edible portion after being cooked, not including skin, bone, or coating (see Food Standards). Unless, serving another high protein food item within the same meal.
3. Meat (1 ounce) alternates include:
    - 1 large egg
    - 1 ounce cheese (nutritionally equivalent measure of pasteurized process cheese, cheese food, cheese spread, or other cheese product)
    - ¼ cup cottage cheese
    - ¼ cup raw, firm tofu
    - 1 ounce of soy type burger
    - 1 tablespoons peanut butter
    - ½ ounce nuts
    - ½ seeds
    - ¼ cup cooked dried beans, peas or lentils (legumes)
    - 2 tablespoons hummus
4. A one or two ounce serving or equivalent portion of meat, poultry, or fish may be served in combination with other high protein foods as long as the combination meets the 3 ounce requirement.
5. Whole meat shall be served a minimum of 1 time per week.
6. Meal programs are required to serve seafood twice per month and are encouraged to serve seafood once a week.
7. Use of high fat and high sodium meats shall be limited to no more than twice a month for cured and processed meats (e.g., hot dogs, sausage, bacon, ham, smoked or Polish sausage, corned beef, luncheon meats, dried beef, fried meats and etc.).
    - High fat indicates the protein portion provides more than 8 grams of fat per ounce equivalent
    - High sodium is defined as greater than 650 mg per serving
8. Additional, to limit the amount of fat, especially saturated fat, and cholesterol in meals, regular ground meat should be served no more than twice weekly.
9. Protein/lean meat/meat alternate items containing textured vegetable protein and providing at least 19 g protein in a (3oz) serving may be served.
10. Except to meet cultural and religious preferences and for emergency meals, serving dried beans, peas or lentils, peanut butter or peanuts, and tofu for consecutive meals or on consecutive days should be avoided.

11. Imitation cheese (which the Food and Drug Administration defines as one not meeting nutritional equivalency requirements for the natural, non-imitation product) cannot be served as meat alternates.

B. Grain, Bread or Alternate
    1. 1-2 Serving(s) grain, bread or bread alternate shall be provided per meal.
    2. A serving of grain or bread is generally 1 slice (1 ounce), whole grain or enriched; ½ cup cooked whole grain or enriched pasta or grain product; or ¾ cup of ready-to-eat cereal. Priority should be given to serving whole grains.
    3. Grain, bread and bread alternates equal to one ounce-equivalent include:
        - 1 slice (1oz.) bread
        - ½ cup cooked pasta, noodles or rice
        - ½ cup barley, millet, oats, quinoa or other whole grain
        - 1 small sandwich bun (<3" diameter)
        - ½ large sandwich bun
        - 1 small roll
        - 2" cube cornbread
        - ½ cup bread dressing/stuffing
        - 1 small 2-ounce muffin, 2" diameter
        - 2 mini muffins
        - 1 biscuit, 2" diameter
        - 1 waffle, 4" diameter
        - 1 pancake, 4" diameter
        - 1 slice French toast
        - ½ slice French toast from "Texas toast"
        - ½ English muffin
        - 1 mini bagel, 1" diameter
        - ¼ large bagel
        - ½ cup cooked cereal
        - ¾ cup ready to eat cereal
        - 1 tortilla, 4-6" diameter
        - 4-6 crackers (soda cracker size)
        - 2 graham cracker squares
        - 3 cups popcorn, popped
        - prepared pie crust, ⅛ of a 8" or 9" two-crust pie
        - ½ cup cooked grain product in serving of fruit "crisp" or cobbler
    4. A variety of enriched and/or whole grain products, particularly those high in fiber, are recommended.

5. Whole-grain products shall be served a minimum of 50% of the time as part of the goal to provide an average of 7 grams of fiber.
6. Whole grains (whole wheat, oats, brown rice, wild rice, popcorn, whole rye, and whole grain multi-grains) must be included at a minimum of 3 times per week.
7. Recommending 1 (one ounce-equivalent) serving of grains when serving a starchy vegetable (see Table 2. Vegetable Subgroups)
8. Grain/bread alternates do not include starchy vegetables such as potatoes, sweet potatoes, corn, yams, or plantains. These foods are included in the vegetable food group.

C. Vegetables
1. 2-3 Serving(s) vegetables: ½ cup-equivalent, may serve an additional vegetable instead of a fruit.
2. Two servings of raw or fresh fruits and vegetables shall be served at least 2 times per week.
3. Vegetables (including cooked dried beans, peas and lentils) equal to ½ cup-equivalent include:
    - ½ cup cooked, drained, fresh, frozen, canned or raw vegetable
    - ¾ cup 100% vegetable juice
    - 1 cup raw leafy vegetable
    - ½ large ear of corn or 1 small ear
    - 1 medium carrot or about 6 baby carrots
    - 1 celery stalk
    - 1 small pepper or ½ large pepper
4. For pre-packed 100% vegetable juices, a ½ cup juice pack may be counted as a serving if a ¾ cup pre-packed serving is not available.
5. Fresh, frozen or unsalted canned vegetables are preferred instead of canned vegetables containing salt.
6. Vegetables as a primary ingredient in soups, stews, casseroles or other combination dishes should total ½ cup of drained weight of vegetables per serving.
7. Each of the five vegetable subgroups must be included in a weekly menu. The five vegetable subgroups include dark green vegetables, orange vegetables, cooked dry beans and peas, starchy vegetables, and "other" vegetables. Serving a variety of vegetables within all vegetable subgroups:
    - Dark green vegetables* must be served at a minimum ½ cup-equivalent per week
    - Red and orange vegetables:* must serve a minimum of 2-3 (½ cup-equivalent) per week

- Legumes* (beans & peas): must serve a minimum of one (½ cup-equivalent) per week
- Starchy vegetables :* recommend serving 2-3 (1/2 cup-equivalent) per week
- Other vegetables:* recommended 2 (1/2 cup-equivalent) per week
- *See Table 2. Vegetable Subgroups

D. Fruits
1. 1-2 Serving(s) fruit: ½ cup-equivalent, may serve an additional fruit instead of a vegetable.
2. Two servings of raw or fresh fruits and vegetables shall be served at least 2 times per week.
3. A serving of a fruit is generally:
    - ½ cup cooked, drained, fresh, frozen, canned or raw fruit
    - 1 small piece of fresh fruit
    - ¾ cup 100% fruit juice
    - ¼ cup dried fruit
    - ½ cup apple sauce
    - 1 small banana or half large
    - 1 medium wedge cantaloupe, 1/8 medium melon
    - 16 grapes
    - ½ medium grapefruit
    - 1 small orange or ½ large
    - 1 large plum
    - 4 large strawberries
4. For pre-packed 100% fruit juices, a ½ cup juice pack may be counted as a serving if a ¾ cup pre-packed serving is not available.
5. Canned fruit preferably packed in juice, no sugar added, water or light syrup.
6. Fruits as a primary ingredient in desserts, gelatin, or other combination dishes should total ½ cup of drained weight of fruit per serving.

E. Milk or Milk Alternates
1. 1 Serving of milk or milk alternate: 1 cup-equivalent shall be served per meal.
2. One cup skim, low fat, whole, buttermilk, low-fat chocolate milk, or lactose-free milk fortified with Vitamins A and D should be used.
3. Low fat or skim milk is recommended for the general population.
4. Powdered dry milk (⅓ cup) or evaporated milk (½ cup) may be served as part of a home-delivered meal.

5. Milk alternates for the equivalent of one cup of milk include:
    - 1 cup milk, preferably fat free or low fat
    - 1 cup yogurt, fat free or low fat
    - 1 cup fortified soymilk
    - 1 ½ ounces natural (1 slice of hard cheese is equivalent to ½ cup)
    - 1/3 cup shredded cheese
    - 2 ounces processed cheese, like American (1 slice of process cheese is equivalent to 1/3 cup milk)
    - 1 ½ cups cottage cheese
    - ½ cup ricotta cheese
    - 1 cup pudding made with milk
    - 1 cup frozen yogurt
    - 1 ½ cup ice cream

F. Oils and Desserts

1. Margarine and the use of condiments are optional.
2. Minimize the use of fat in food preparation. Fats should be primarily vegetable sources and in a liquid or soft (spreadable) form that is low in hydrogenated fat, saturated fat, and cholesterol.
3. Use low-fat salad dressing, spreads, cheese and gravies (made without drippings and fats).
4. Bake, broil, steam or stew foods in place of frying food in fat.
5. Desserts are not required but are recommended to be incorporated into the weekly menu.
6. Desserts can be used to fulfil the fruit, grain and/or milk components.
7. Limiting desserts with high fat and/or sugar content to no more than once per week.
8. Desserts may be provided as an option to satisfy the caloric requirements or for additional nutrients.

VIII. Food Preparation Requirements

A. Following the Food Preparation Requirements are required for those following Food Pattern Modeling.
B. When cooking, use salt sparingly or eliminate entirely by using spices, herbs or other seasoning. To flavor foods, use salt-free seasoning, lemon juice, lime juice or vinegar.
C. Use low-sodium meats, flavorings, and seasonings.
D. Use of salt, pepper and other spices can be made available to service participants.
E. Minimize the use of fat in food preparation. Fats should be primarily vegetable sources and in a liquid or soft (spreadable) form that is low in hydrogenated fat, saturated fat, and cholesterol.
F. Use low-fat salad dressing, spreads, cheese and gravies (made without drippings and fats).
G. Bake, broil, steam or stew foods in place of frying food in fat.
H. Use whole grains, meat alternatives, and fruits and vegetables to increase the fiber content of the menus.
I. Adhere to, seasonal availability of food items.
J. Plan so that food items within the meat and meat alternatives, vegetable, fruit and grain/bread groups are varied within the week and menu cycle.
K. A variety of food and preparation methods, include color combinations texture, size, shape, taste, and appearance.
L. Beverages such as coffee, tea and decaffeinated beverages may be used, but cannot be counted as fulfilling any part of the meal requirements. Nonnutritive beverages do not help meet nutrition requirements but can help with hydration.
M. Desserts may be provided as an option to satisfy the caloric requirements or for additional nutrients. Desserts such as fruit, whole grains, low fat or low sugar products are encouraged. Fresh, frozen, or canned fruits packed in their own juice are encouraged often as a dessert item, in addition to the serving of fruit provided as part of the meal. However, if a dessert contains at least ½ cup of fruit it may be counted as a serving of fruit. A dessert containing at least ½ cup enriched/whole grain product may be counted as a serving of grain. For example, a serving of two crust (approx. ⅛ of 8" or 9" pie) fruit pie that contains at least ½ cup fruit is counted as one serving fruit and one serving grain.
N. Ethnic or religious menus must approximate as closely as possible (given religious requirements or ethnic background) the regular meal pattern and nutrient content of meals as previously stated.
O. Meals served in accordance with the meal standards are appropriate for persons with chronic disease, such as diabetes, heart disease and hypertension.

IX. Substitutions

A. For both meal analysis and meal patterns, all meals must be offered as written. If a meal cannot be offered as written, the changes must be documented and kept on file for 5 years.
B. All changes must be documented and initialed by head cook.
C. Food substitutions should be infrequent.
D. If a provider chooses to serve substitutes, the substitution must be within the same meal component (acceptable example: apple substituted for pear, non-acceptable example: roll substituted for pear).

X. Special Meals

Religious, ethnic, cultural, regional, or medical (i.e. diabetic, sodium-restricted) dietary requirements or preferences of a major portion of the participants at a congregate meal site shall be reflected in the meals served. Where feasible, efforts should be made to meet individual dietary requirements or preferences.

XI. Compliance and Monitoring

If a nutrition provider is found not following the approved methods, it can result in further record keeping of calories, carbohydrates, sodium and saturated fat. . It may also result in the recoupment of grant funds (Refer to Title III Older Americans Act Policy Manual, Section 300.22).

It is ultimately the responsibility of the provider to verify that these methods meet the requirements of the nutrition contract.

XII. Definitions:

Added Sugars—Syrups and other caloric sweeteners used as a sweetener in other food products. Naturally occurring sugars such as those in fruit or milk are not added sugars. Specific examples of added sugars that can be listed as an ingredient include brown sugar, corn sweetener, corn syrup, dextrose, fructose, glucose, high-fructose corn syrup, honey, invert sugar, lactose, malt syrup, maltose, molasses, raw sugar, sucrose, trehalose, and turbinado sugar.

Calorie—A unit commonly used to measure energy content of foods and beverages as well as energy use (expenditure) by the body. A kilo calorie is equal to the amount of energy (heat) required to raise the temperature of 1kilogram of water 1 degree centigrade. Energy is required to sustain the body's various functions, including metabolic processes and physical activity. Carbohydrate, fat, protein, and alcohol provide all of the energy supplied by foods and beverages. If not specified explicitly, references to "calories" refer to "kilocalories."

Carbohydrates—One of the macronutrients and a source of energy. They include sugars, starches, and fiber:

- **Fiber**—Total fiber is the sum of *dietary fiber* and *functional fiber*. Dietary fiber consists of non-digestible carbohydrates and lignin that are intrinsic and intact in plants (i.e., the fiber naturally occurring in foods).Functional fiber consists of isolated, non-digestible carbohydrates that have beneficial physiological effects in humans. Functional fibers are either extracted from natural sources or are synthetically manufactured and added to foods, beverages, and supplements.

- **Starches**—Many glucose units linked together into long chains. Examples of foods containing starch include vegetables (e.g., potatoes, carrots), grains (e.g., brown rice, oats, wheat, barley, corn), and legumes (beans and peas; e.g., kidney beans ,garbanzo beans, lentils, split peas).

- **Sugars**—Composed of one unit (a monosaccharide, such as glucose or fructose) or two joined units (a disaccharide, such as lactose or sucrose). Sugars include those occurring naturally in foods and beverages, those added to foods and beverages during processing and preparation, and those consumed separately.

Cardiovascular Disease (CVD)— Heart disease as well as diseases of the blood vessel system (arteries, capillaries, veins) that can lead to heart attack, chest pain (angina), or stroke.

Cup-Equivalent (cup-eq or c-eq)— The amount of a food or beverage product that is considered equal to 1 cup from the vegetables, fruits, or dairy food groups. A cup-eq for some foods or beverages may differ from a measured cup in volume because the foods have

been concentrated (such as raisins or tomato paste), the foods are airy in their raw form and do not compress well into a cup (such as salad greens), or the foods are measured in a different form (such as cheese).

Diabetes—A disorder of metabolism— the way the body uses digested food (specifically carbohydrate) for growth and energy. In diabetes, the pancreas either produces little or no insulin (a hormone that helps glucose, the body's main source of fuel, get into cells), or the cells do not respond appropriately to the insulin that is produced, which causes too much glucose to be released in the blood. The three main types of diabetes are type 1, type 2, and gestational diabetes. If not controlled, diabetes can lead to serious complications.

Dietary Guidelines for Americans – refers to the foundation of Federal nutrition policy and nutrition education activities issued and updated every five years by the Departments of Agriculture (USDA) and Health and Human Services (HHS).The dietary guidelines serve as the basis for Federal food and nutrition education programs. They are intended for healthy Americans two years and older. They provide authoritative advice about consuming fewer calories, making informed food choices, and being physically active to attain and maintain a healthy weight, reduce risk of chronic disease, and promote overall health. They are not designed for younger children and infants whose dietary needs differ. The guidelines are based on growing scientific evidence for lowering the risk of chronic disease and promoting health.

Dietary Reference Intakes (DRIs)—A set of nutrient-based reference values that are quantitative estimates of nutrient intakes to be used for planning and assessing diets for healthy people. DRIs expand on the periodic reports called Recommended Dietary Allowances (RDAs), which were first published by the Institute of Medicine in 1941.

- **Acceptable Macronutrient Distribution Ranges (AMDR)**—Range of intake for a particular energy source (i.e., carbohydrate, fat, and protein) that is associated with reduced risk of chronic disease while providing intakes of essential l nutrients. If an individual's intake is outside of the AMDR, there is a potential of increasing the risk of chronic diseases and/or insufficient intakes of essential nutrients.

- **Adequate Intakes (AI)**—A recommended average daily nutrient intake level based on observed or experimentally determined approximations or estimates of mean nutrient intake by a group (or groups) of apparently healthy people. An AI is used when the Recommended Dietary Allowance cannot be determined.

- **Estimated Average Requirements (EAR)**—The average daily nutrient intake level estimated to meet the requirement of half the healthy individuals in a particular life stage and sex group.

- **Recommended Dietary Allowances (RDA)**—The average daily dietary intake level that is sufficient to meet the nutrient requirement of nearly all (97 to 98%) healthy individuals in a particular life stage and sex group.

- **Tolerable Upper Intake Levels (UL)**—The highest average daily nutrient intake level likely to pose no risk of adverse health effects for nearly all individuals in a particular life stage and sex group. As intake increases above the UL, the potential risk of adverse health effects increases.

Dry heat cooking method – involve the circulation of hot air or direct contact to fat to transfer heat. Most often, this promotes the caramelization of surface sugars in foods. Common dry-heat cooking methods include: pan frying, searing, roasting, sautéing, sweating, stir-frying, shallow- and deep-frying, grilling, broiling, baking and rotisserie cooking.

Eating Pattern (also called "dietary pattern")—The combination of foods and beverages that constitute an individual's complete dietary intake over time. This may be a description of a customary way of eating or a description of a combination of foods recommended for consumption. Specific examples include USDA Food Patterns and the Dietary Approaches to Stop Hypertension (DASH) Eating Plan. (See USDA Food Patterns and DASH Eating Plan.)

Enrichment—The addition of specific nutrients (i.e., iron, thiamin, riboflavin, and niacin) to refined grain products in order to replace losses of the nutrients that occur during processing. Enrichment of refined grains is not mandatory; however, those that are labeled as enriched (e.g., enriched flour) must meet the standard of identity for enrichment set by the FDA. When cereal grains are labeled as enriched, it is mandatory that they be fortified with folic acid. (The addition of specific nutrients to whole-grain products is referred to as fortification; see Fortification.)

Fats—One of the macronutrients and a source of energy. (See Solid Fats and Oils.)

- **Saturated Fatty Acids**—Fatty acids that have no double bonds. Fats high in saturated fatty acids are usually solid at room temperature. Major sources include animal products such as meats and dairy products, and tropical oils such as coconut or palm oils.

- ***Trans* Fatty Acids**—Unsaturated fatty acids that are structurally different from the unsaturated fatty acids that occur naturally in plant foods. Sources of *trans* fatty acids include partially hydrogenated vegetable oils used in processed foods such as desserts, microwave popcorn, frozen pizza, some margarines, and coffee creamer. *Trans* fatty acids also are present naturally in foods that come from ruminant animals (e.g., cattle and sheep), such as dairy products, beef, and lamb.

- **Fat-free**- containing no fat.

- **Low fat**-means a product contains 3 grams of fat or less per serving, and 30 percent or less of the total calories are from fat.

- **Reduced fat**- contains at least 25 percent less fat than the original version.

Food Groups—A method of grouping similar foods for descriptive and guidance purposes. Food groups in the USDA Food Patterns are defined as vegetables, fruits, grains, dairy, and protein foods. Some of these groups are divided into subgroups, such as dark-green vegetables or whole grains, which may have intake goals or limits. Foods are grouped within food groups based on their similarity in nutritional composition and other dietary benefits. For assignment to food groups, mixed dishes are disaggregated into their major component parts.

Food Pattern Modeling—The process of developing and adjusting daily intake amounts from food categories or groups to meet specific criteria, such as meeting nutrient intake goals, limiting nutrients or other food components, or varying proportions or amounts of specific food categories or groups. This methodology includes using current food consumption data to determine the mix and proportions of foods to include in each group, using current food composition data to select a nutrient-dense representative for each food, calculating nutrient profiles for each food group using these nutrient-dense representative foods, and modeling various combinations of foods and amounts to meet specific criteria. (See USDA Food Patterns.)

Fortification—As defined by the U.S. Food and Drug Administration (FDA), the deliberate addition of one or more essential nutrients to a food, whether or not it is normally contained in the food. Fortification may be used to prevent or correct a demonstrated deficiency in the population or specific population groups; restore naturally occurring nutrients lost during processing, storage, or handling; or to add a nutrient to a food at the level found in a comparable traditional food. When cereal grains are labeled as enriched, it is mandatory that they be fortified with folic acid.

Health—A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

Hypertension—A condition, also known as high blood pressure, in which blood pressure remains elevated over time. Hypertension makes the heart work too hard, and the high force of the blood flow can harm arteries and organs, such as the heart, kidneys, brain, and eyes. Uncontrolled hypertension can lead to heart attacks, heart failure, kidney disease, stroke, and blindness. Prehypertension is defined as blood pressure that is higher than normal but not high enough to be defined as hypertension.

Imitation cheese- made with ingredients other than cheese which may enhance, improve or alter the nutritionals components.

Macronutrient—A dietary component that provides energy. Macronutrients include protein, fats, carbohydrates, and alcohol.

Meats & Poultry—Foods that come from the flesh of land animals and birds. In the USDA Food Patterns, organs (such as liver) are also considered to be meat or poultry.

- **Meat** (also known as "red meat")—All forms of beef, pork, lamb, veal, goat, and non-bird game (e.g., venison, bison, elk).

- **Poultry**—All forms of chicken, turkey, duck, geese, guineas, and game birds (e.g., quail, pheasant).

- **Lean Meat & Lean Poultry**—Any meat or poultry that contains less than 10 g of fat, 4.5 g or less of saturated fats, and less than 95mg of cholesterol per 100 g and per labeled serving size, based on USDA definitions for food label use. Examples include 95% lean cooked ground beef, beef top round steak or roast, beef tenderloin, pork top loin chop or roast, pork tenderloin, ham or turkey deli slices, skinless chicken breast, and skinless turkey breast.

- **High fat meats** – indicates the protein portion provides more than 8 grams of fat per ounce equivalent.

- **Processed Meat & Processed Poultry**—All meat or poultry products preserved by smoking, curing, salting, and/or the addition of chemical preservatives. Processed meats and poultry include all types of meat or poultry sausages (bologna ,frankfurters, luncheon meats and loaves, sandwich spreads, viennas, chorizos, kielbasa, pepperoni, salami, and summer sausages),bacon, smoked or cured ham or pork shoulder, corned beef, pastrami, pig's feet, beef jerky, marinated chicken breasts, and smoked turkey products.

Menu – is a list of foods to be served in a given meal.

- **Menu planning –** is the detailed selection process of creating a menu and is very complex.

- **Cycle Menu –** a menu that repeats over a period of time

Moist heat cooking method – uses water, liquid or steam to transfer heat to food. Common moist-heat cooking methods include: poaching, simmering, boiling, braising, stewing, pot roasting, steaming and en papillote.

Oils—Fats that are liquid at room temperature. Oils come from many different plants and some fish. Some common oils include canola, corn, olive, peanut, safflower, soybean, and sunflower oils. A number of foods are naturally high in oils such as nuts, olives, some fish, and avocados. Foods that are mainly made up of oil include mayonnaise, certain salad

dressings, and soft (tub or squeeze) margarine with no *trans* fats. Oils are high in monounsaturated or polyunsaturated fats, and lower in saturated fats than solid fats. A few plant oils, termed tropical oils, including coconut oil, palm oil and palm kernel oil, are high in saturated fats and for nutritional purposes should be considered as solid fats. Partially hydrogenated oils that contain *trans* fats should also be considered as solid fats for nutritional purposes.

Ounce-Equivalent (oz-eq)—The amount of a food product that is considered equal to 1 ounce from the grain or protein foods food group. An oz-eq for some foods may be less than a measured ounce in weight if the food is concentrated or low in water content (nuts, peanut butter, dried meats, flour) or more than a measured ounce in weight if the food contains a large amount of water (tofu, cooked beans, cooked rice or pasta).

Portion Size—The amount of a food served or consumed in one eating occasion. A portion is not a standardized amount, and the amount considered to be a portion is subjective and varies.

Processed cheese- (also known as prepared **cheese**, **cheese** product, or **cheese** singles) **is** a food product made from **cheese** (and sometimes other, unfermented, dairy by-product ingredients), plus emulsifiers, saturated vegetable oils, extra salt, food colorings, whey or sugar.

Protein—One of the macronutrients; a major functional and structural component of every animal cell. Proteins are composed of amino acids, nine of which are indispensable (essential), meaning they cannot be synthesized by humans and therefore must be obtained from the diet. The quality of dietary protein is determined by its amino acid profile relative to human requirements as determined by the body's requirements for growth, maintenance, and repair. Protein quality is determined by two factors: digestibility and amino acid composition.

Refined Grains—Grains and grain products with the bran and germ removed; any grain product that is not a whole-grain product. Many refined grains are low in fiber but enriched with thiamin, riboflavin, niacin, and iron, and fortified with folic acid.

Seafood—Marine animals that live in the sea and in freshwater lakes and rivers. Seafood includes fish (e.g., salmon, tuna, trout, and tilapia) and shellfish (e.g., shrimp, crab, and oysters).

Serving Size—A standardized amount of a food, such as a cup or an ounce, used in providing information about a food within a food group, such as in dietary guidance. Serving size on the Nutrition Facts label is determined based on the Reference Amounts Customarily Consumed (RACC) for foods that have similar dietary usage, product

characteristics, and customarily consumed amounts for consumers to make "like product" comparisons. (See Portion Size.)

Solid Fats—Fats that are usually not liquid at room temperature. Solid fats are found in animal foods, except for seafood, and can be made from vegetable oils through hydrogenation. Some tropical oil plants, such as coconut and palm, are considered as solid fats due to their fatty acid composition. The fat component of milk and cream (butter) is solid at room temperature. Solid fats contain more saturated fats and/or *trans* fats than liquid oils (e.g., soybean, canola, and corn oils), with lower amounts of monounsaturated or polyunsaturated fatty acids. Common fats considered to be solid fats include: butter, beef fat (tallow), chicken fat, pork fat (lard), shortening, coconut oil, palm oil and palm kernel oil. Foods high in solid fats include: full-fat (regular) cheeses, creams, whole milk, ice cream, marbled cuts of meats, regular ground beef, bacon, sausages, poultry skin, and many baked goods made with solid fats (such as cookies, crackers, doughnuts, pastries, and croissants).

USDA Food Patterns—A set of eating patterns that exemplify healthy eating, which all include recommended intakes for the five food groups (vegetables, fruits, grains, dairy, and protein foods) and for subgroups within the vegetables, grains, and protein foods groups. They also recommend an allowance for intake of oils. Patterns are provided at 12 calorie levels from 1,000 to 3,200 calories to meet varied calorie needs. The Healthy U.S.-Style Pattern is the base USDA Food Pattern.

> **Healthy U.S.-Style Eating Pattern**—A pattern that exemplifies healthy eating based on the types and proportions of foods Americans typically consume, but in nutrient-dense forms and appropriate amounts, designed to meet nutrient needs while not exceeding calorie requirements. It is substantially unchanged from the primary USDA Food Patterns of the*2010 Dietary Guidelines*. This pattern is evaluated in comparison to meeting Dietary Reference Intakes for essential nutrients and staying within limits set by the IOM or *Dietary Guidelines* for overconsumed food components. It aligns closely with the Dietary Approaches to Stop Hypertension (DASH) Eating Plan, a guide for healthy eating based on the DASH diet which was tested in clinical trials.

Variety—A diverse assortment of foods and beverages across and within all food groups and subgroups selected to fulfill the recommended amounts without exceeding the limits for calories and other dietary components. For example, in the vegetables food group, selecting a variety of foods could be accomplished over the course of a week by choosing from all subgroups, including dark green, red and orange, legumes (beans and peas), starchy, and other vegetables.

Whole Fruits—All fresh, frozen, canned, and dried fruit but not fruit juice.

Whole Grains—Grains and grain products made from the entire grain seed, usually called the kernel, which consists of the bran, germ, and endosperm. If the kernel has been cracked, crushed, or flaked, it must retain the same relative proportions of bran, germ, and endosperm as the original grain in order to be called whole grain. Many, but not all, whole grains are also sources of dietary fiber.