

Planning a Healthy Diet Principles, Guidelines, and Guides

Chapter 2





What Is A Healthy Diet?



Dietary Planning Principles

- Adequacy
 - Sufficient energy
 - Adequate nutrients for healthy people
- Balance
 - Enough but not too much
- kCalorie (energy) control
 - Energy in = energy out
 - High nutrient density foods



Dietary Planning Principles

- Nutrient density
 - The most nutrients for the fewest calories
 - Low-nutrient density foods
- Moderation
 - Food selections – low in fat & added sugars
- Variety
 - Among and within food groups
 - Benefits of a varied diet



Dietary Guidelines

- Dietary Guidelines for Americans
 - Science-based advice
 - Promote health and reduce chronic diseases
 - Nine areas of recommendation, covering
 - Diet
 - Physical activity
 - Reviewed, revised as necessary every 5 years



Premise of the Dietary Guidelines

- Nutrient needs are met through foods
- Dietary Patterns should
 - promote health
 - reduce risk of chronic disease
 - reduce food borne illnesses
- Eating Patterns to support guidelines
 - USDA Food Pattern
 - DASH Diet



Components of a Healthy Diet?

- Emphasizes fruits, vegetables, whole grains, and fat-free or low-fat milk and milk products;
- Includes lean meats, poultry, fish, beans, eggs, and nuts; and
- Is low in saturated fats, *trans* fats, cholesterol, salt (sodium), and added sugars.



Diet-Planning Guides

- USDA Food Pattern
 - [Choosemyplate.gov](http://choosemyplate.gov)
- DASH Diet

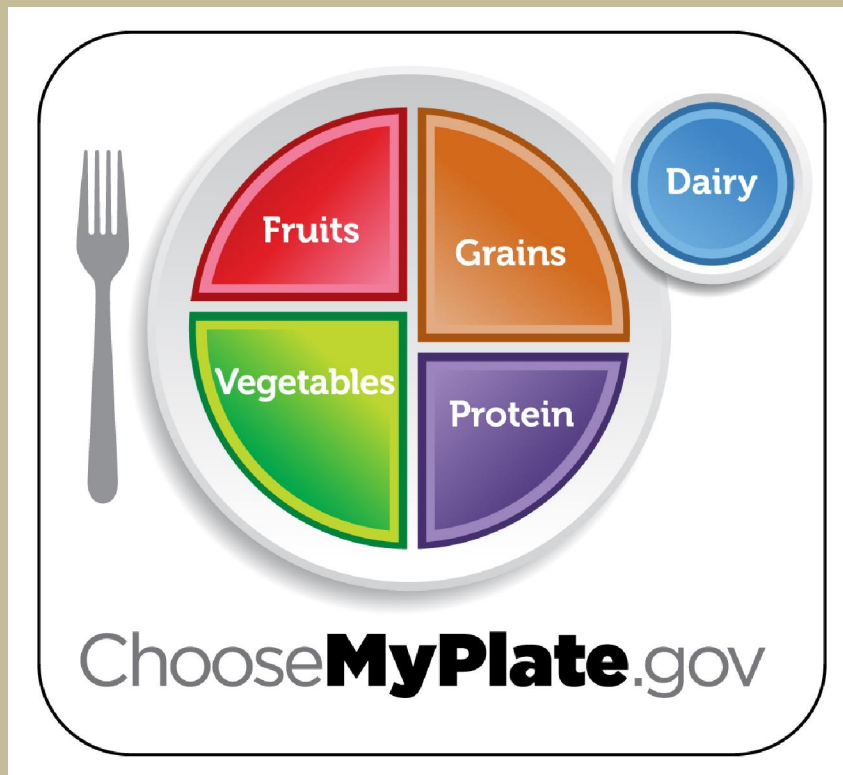


2010 Dietary Guidelines

Principles

Maintain Calorie balance
to achieve and maintain
healthy weight

Focus on consuming
nutrient dense foods
and beverages





2010 Dietary Guidelines Key Recommendations

- Balance Calories to Manage Weight
- Foods and Food Components to Reduce
- Food and Nutrients to Increase
- Get in groups of 3-4 and identify strategies to meet these guidelines



Diet-Planning Guides: Nutrients and Food Portions

Key:

- Foods generally high in nutrient density (choose most often)
- ▲ Foods lower in nutrient density (limit selections)

FRUITS



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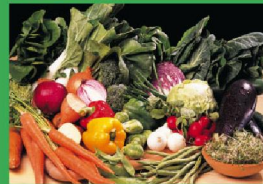
Consume a variety of fruits and no more than one-half of the recommended intake as fruit juice.

These foods contribute folate, vitamin A, vitamin C, potassium, and fiber.

1 c fruit is equivalent to 1 c fresh, frozen, or canned fruit; ½ c dried fruit; 1 c fruit juice.

- Apples, apricots, avocados, bananas, blueberries, cantaloupe, cherries, grapefruit, grapes, guava, kiwi, mango, nectarines, oranges, papaya, peaches, pears, pineapples, plums, raspberries, strawberries, tangerines, watermelon; dried fruit (dates, figs, raisins); unsweetened juices.
- ▲ Canned or frozen fruit in syrup; juices, punches, ades, and fruit drinks with added sugars; fried plantains.

VEGETABLES



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Choose a variety of vegetables each day, and choose from all five subgroups several times a week.

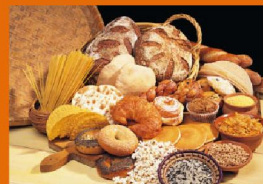
These foods contribute folate, vitamin A, vitamin C, vitamin K, vitamin E, magnesium, potassium, and fiber.

1 c vegetables is equivalent to 1 c cut-up raw or cooked vegetables; 1 c cooked legumes; 1 c vegetable juice; 2 c raw, leafy greens.

Vegetable subgroups

1. Dark green vegetables: Broccoli and leafy greens such as arugula, beet greens, bok choy, collard greens, kale, mustard greens, romaine lettuce, spinach, and turnip greens.
 2. Orange and deep yellow vegetables: Carrots, carrot juice, pumpkin, sweet potatoes, and winter squash (acorn, butternut).
 3. Legumes: Black beans, black-eyed peas, garbanzo beans (chickpeas), kidney beans, lentils, navy beans, pinto beans, soybeans and soy products such as tofu, and split peas.
 4. Starchy vegetables: Cassava, corn, green peas, hominy, lima beans, and potatoes.
 5. Other vegetables: Artichokes, asparagus, bamboo shoots, bean sprouts, beets, brussels sprouts, cabbages, cactus, cauliflower, celery, cucumbers, eggplant, green beans, iceberg lettuce, mushrooms, okra, onions, peppers, seaweed, snow peas, tomatoes, vegetable juices, zucchini.
- ▲ Baked beans, candied sweet potatoes, coleslaw, french fries, potato salad, refried beans, scalloped potatoes, tempura vegetables.

GRAINS



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Make at least half of the grain selections whole grains.

These foods contribute folate, niacin, riboflavin, thiamin, iron, magnesium, selenium, and fiber.

1 oz grains is equivalent to 1 slice bread; ½ c cooked rice, pasta, or cereal; 1 oz dry pasta or rice; 1 c ready-to-eat cereal; 3 c popped popcorn.

- Whole grains (amaranth, barley, brown rice, buckwheat, bulgur, millet, oats, quinoa, rye, wheat) and whole-grain, low-fat breads, cereals, crackers, and pastas; popcorn.
- Enriched bagels, breads, cereals, pastas (couscous, macaroni, spaghetti), pretzels, rice, rolls, tortillas.
- ▲ Biscuits, cakes, cookies, cornbread, crackers, croissants, doughnuts, french toast, fried rice, granola, muffins, pancakes, pastries, pies, presweetened cereals, taco shells, waffles.



Diet-Planning Guides: Nutrients and Food Portions

MEAT, POULTRY, FISH, LEGUMES, EGGS, AND NUTS



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Make lean or low-fat choices. Prepare them with little, or no, added fat.

Meat, poultry, fish, and eggs contribute protein, niacin, thiamin, vitamin B₆, vitamin B₁₂, iron, magnesium, potassium, and zinc; legumes and nuts are notable for their protein, folate, thiamin, vitamin E, iron, magnesium, potassium, zinc, and fiber.

**1 oz meat is equivalent to 1 oz cooked lean meat, poultry, or fish; 1 egg;
¼ c cooked legumes or tofu; 1 tbs peanut butter; ½ oz nuts or seeds.**

- Poultry (no skin), fish, shellfish, legumes, eggs, lean meat (fat-trimmed beef, game, ham, lamb, pork), low-fat tofu, tempeh, peanut butter, nuts (almonds, filberts, peanuts, pistachios, walnuts) or seeds (flaxseeds, pumpkin seeds, sunflower seeds).
- ▲ Bacon; baked beans; fried meat, fish, poultry, eggs, or tofu; refried beans; ground beef; hot dogs, luncheon meats; marbled steaks; poultry with skin; sausages, spare ribs.

MILK, YOGURT, AND CHEESE



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Make fat-free or low-fat choices. Choose lactose-free products or other calcium-rich foods if you don't consume milk.

These foods contribute protein, riboflavin, vitamin B₁₂, calcium, magnesium, potassium, and, when fortified, vitamin A and vitamin D.

1 c milk is equivalent to 1 c fat-free milk or yogurt; 1½ oz fat-free natural cheese; 2 oz fat-free processed cheese.

- Fat-free milk and fat-free milk products such as buttermilk, cheeses, cottage cheese, yogurt, fat-free fortified soy milk.
- ▲ 1% low-fat milk, 2% reduced-fat milk, and whole milk, low-fat, reduced-fat, and whole-milk products such as cheeses, cottage cheese, and yogurt; milk products with added sugars such as chocolate milk, custard, ice cream, ice milk, milk shakes, pudding, sherbet; fortified soy milk.

OILS



Matthew Farnuglio

Select the recommended amounts of oils from among these sources.

These foods contribute vitamin E and essential fatty acids (see Chapter 5), along with abundant kcalories.

1 tsp oil is equivalent to 1 tbs low-fat mayonnaise; 2 tbs light salad dressing; 1 tsp vegetable oil; 1 tsp soft margarine.

- Liquid vegetable oils such as canola, corn, flaxseed, nut, olive, peanut, safflower, sesame, soybean, and sunflower oils; mayonnaise, oil-based salad dressing, soft trans-free margarine.
- Unsaturated oils that occur naturally in foods such as avocados, fatty fish, nuts, olives, seeds (flaxseeds, sesame seeds), and shellfish.

SOLID FATS AND ADDED SUGARS



Matthew Farnuglio

Limit intakes of food and beverages with solid fats and added sugars.

Solid fats deliver saturated fat and trans fat, and intake should be kept low. Solid fats and added sugars contribute abundant kcalories but few nutrients, and intakes should not exceed the discretionary kcalorie allowance—kcalories to meet energy needs after all nutrient needs have been met with nutrient-dense foods. Alcohol also contributes abundant kcalories but few nutrients, and its kcalories are counted among discretionary kcalories. See Table 2-2 for some discretionary kcalorie allowances.

- ▲ Solid fats that occur in foods naturally such as milk fat and meat fat (see ▲ in previous lists).
- ▲ Solid fats that are often added to foods such as butter, cream cheese, hard margarine, lard, sour cream, and shortening.
- ▲ Added sugars such as brown sugar, candy, honey, jelly, molasses, soft drinks, sugar, and syrup.
- ▲ Alcoholic beverages include beer, wine, and liquor.



Diet-Planning Guides – Grocery Shopping

- Grains
 - Whole-grain products
 - Fortification & enrichment
- Vegetables
 - Fresh vs. canned or frozen
- Milk
- Fruits
 - Colors
 - Fruit juices
- Meat, fish, & poultry
 - Lean cuts
 - Portion sizes
 - Cooking techniques



Group Activity

- List the notable nutrients and common food portions for each food group.
- Design a grocery store to meet the dietary guidelines, reduce chronic disease, and reduce costs.
- What changes will you make when you go to the grocery store??



Diet-Planning Guides: Meal Planning

TABLE 2-6 Diet Planning Using the USDA Food Guide

This diet plan is one of many possibilities. It follows the amounts of foods suggested for a 2000-kcalorie diet as shown in Table 2-2 on p. 42 (with a little less oil).

Food Group	Amounts	Breakfast	Lunch	Snack	Dinner	Snack
Fruits	2 c	½ c		½ c	1 c	
Vegetables	2½ c		1 c		1½ c	
Grains	6 oz	1 oz	2 oz	½ oz	2 oz	½ oz
Meat and legumes	5½ oz		2 oz		3½ oz	
Milk	3 c	1 c		1 c		1 c
Oils	6 tsp		1½ tsp		4 tsp	
Discretionary kcalorie allowance	267 kcal					



Food Labels

- Reasons for food label use
- Product not required to have food labels
 - Voluntary use of labels
- Restaurant food labeling
 - Portion sizes



Food Labels

The name and address of the manufacturer, packer, or distributor

The common or usual product name

Approved nutrient claims if the product meets specified criteria

The net contents in weight, measure, or count

Approved health claims stated in terms of the total diet

Nutrition Facts

Serving Size $\frac{3}{4}$ cup (28 g) Servings Per Container 14

Amount Per Serving

Calories 110 **Calories from Fat** 9

	% Daily Value*
Total Fat 1 g	2%
Saturated Fat 0 g	0%
Trans Fat 0 g	
Cholesterol 0 mg	0%
Sodium 250 mg	10%
Total Carbohydrate 23 g	8%
Dietary Fiber 1.5 g	6%
Sugars 10 g	
Protein 3 g	

Vitamin A 25% • Vitamin C 25% • Calcium 2% • Iron 25%

*Percent Daily Values are based on a 2000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

	Calories: 2000	2500
Total fat	Less than 65 g	80 g
Sat fat	Less than 20 g	25 g
Cholesterol	Less than 300 mg	300 mg
Sodium	Less than 2400 mg	2400 mg
Total Carbohydrate	300 g	375 g
Fiber	25 g	30 g

Calories per gram
Fat 9 • Carbohydrate 4 • Protein 4

INGREDIENTS, listed in descending order of predominance: Corn, Sugar, Salt, Malt flavoring, freshness preserved by BHT.
VITAMINS and MINERALS: Vitamin C (Sodium ascorbate), Niacinamide, Iron, Vitamin B₆ (Pyridoxine hydrochloride), Vitamin B₉ (Riboflavin), Vitamin A (Palmitate), Vitamin B₁₂ (Thiamin hydrochloride), Folic acid, and Vitamin D.

The serving size and number of servings per container

kCalorie information and quantities of nutrients per serving, in actual amounts

Quantities of nutrients as “% Daily Values” based on a 2000-kcalorie energy intake

Daily Values reminder for selected nutrients for a 2000- and a 2500-kcalorie diet

kCalorie per gram reminder

The ingredients in descending order of predominance by weight

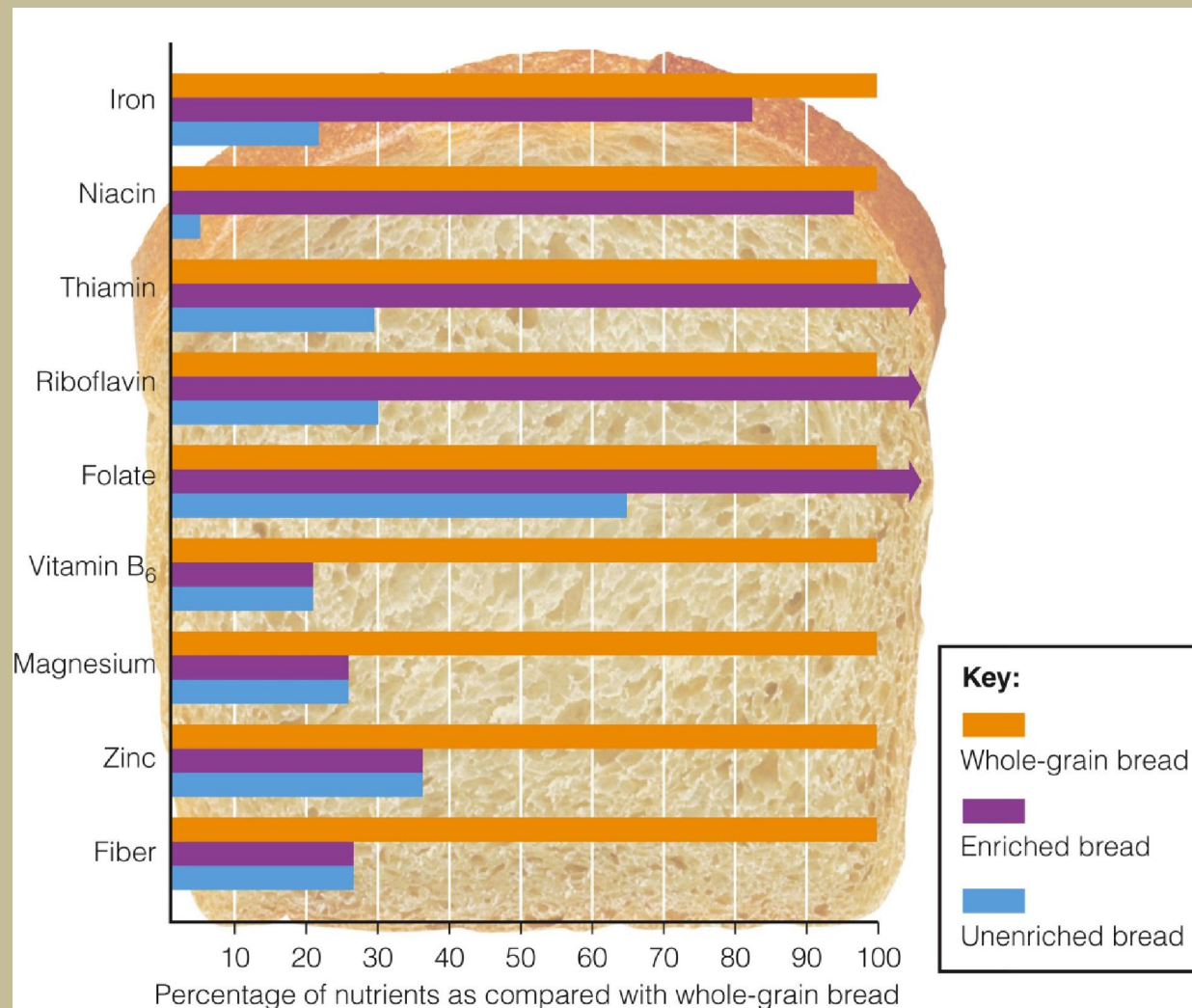


Food Labels

- Ingredient list
 - Listing of all ingredients
 - Descending order of predominance by weight
- Serving sizes
 - Food and Drug Administration (FDA) role
 - Adjust calculations according to amount consumed
 - Sizes listed vs. USDA Food Guide sizes



Diet-Planning Guides





Food Labels

- Nutrition Facts
 - Quantities and Daily Values
 - Required information
 - Total food energy; food energy from fat
 - Total fat; saturated fat; trans fat; cholesterol
 - Sodium
 - Total carbohydrate; dietary fiber; sugars
 - Protein
 - Vitamins A & C; iron; calcium



Food Labels

- Daily Values
 - Expressed as percentage
 - Relationship to health
 - “Ballpark” estimate of contribution to total diet
 - Based on 2000 kcalories per day



Food Label Claims

- Nutrient claims
 - Meet FDA definitions
- Health claims
 - Need for scientific evidence
 - FDA report card
- Structure-function claims
 - Made without FDA approval



Using Food Labels to Meet Dietary Guidelines

TABLE 2-12 From Guidelines to Groceries

Dietary Guidelines	USDA Food Guide/MyPyramid	Food Labels
Adequate nutrients within energy needs	Select the recommended amounts from each food group at the energy level appropriate for your energy needs.	Look for foods that describe their vitamin, mineral, or fiber contents as a <i>good source</i> or <i>high</i> .
Weight management	Select nutrient-dense foods and beverages within and among the food groups. Limit high-fat foods and foods and beverages with added fats and sugars. Use appropriate portion sizes.	Look for foods that describe their kcalorie contents as <i>free</i> , <i>low</i> , <i>reduced</i> , <i>light</i> , or <i>less</i> .
Physical activity	Be physically active for at least 30 minutes most days of the week. Children and teenagers should be physically active for 60 minutes every day, or most days.	
Food groups to encourage	Select a variety of fruits each day. Include vegetables from all five subgroups (dark green, orange, legumes, starchy vegetables, and other vegetables) several times a week. Make at least half of the grain selections whole grains. Select fat-free or low-fat milk products.	Look for foods that describe their fiber contents as <i>good source</i> or <i>high</i> . Look for foods that provide at least 10 percent of the Daily Value for fiber, vitamin A, vitamin C, iron, and calcium from a variety of sources.
Fats	Choose foods within each group that are lean, low fat, or fat-free. Choose foods within each group that have little added fat.	Look for foods that describe their fat, saturated fat, <i>trans</i> fat, and cholesterol contents as <i>free</i> , <i>less</i> , <i>low</i> , <i>light</i> , <i>reduced</i> , <i>lean</i> , or <i>extra lean</i> . Look for foods that provide no more than 5 percent of the Daily Value for fat, saturated fat, and cholesterol.
Carbohydrates	Choose fiber-rich fruits, vegetables, and whole grains often. Choose foods and beverages within each group that have little added sugars.	Look for foods that describe their sugar contents as <i>free</i> or <i>reduced</i> . A food may be high in sugar if its ingredients list begins with or contains several of the following: <i>sugar</i> , <i>sucrose</i> , <i>fructose</i> , <i>maltose</i> , <i>lactose</i> , <i>honey</i> , <i>syrup</i> , <i>corn syrup</i> , <i>high-fructose corn syrup</i> , <i>molasses</i> , <i>evaporated cane juice</i> , or <i>fruit juice concentrate</i> .
Sodium and potassium	Choose foods within each group that are low in salt or sodium. Choose potassium-rich foods such as fruits and vegetables.	Look for foods that describe their salt and sodium contents as <i>free</i> , <i>low</i> , or <i>reduced</i> . Look for foods that provide no more than 5 percent of the Daily Value for sodium. Look for foods that provide at least 10 percent of the Daily Value for potassium.
Alcoholic beverages	Use sensibly and in moderation (no more than one drink a day for women and two drinks a day for men).	<i>Light</i> beverages contain fewer kcalories and less alcohol than regular versions.
Food safety		Follow the <i>safe handling instructions</i> on packages of meat and other safety instructions, such as <i>keep refrigerated</i> , on packages of perishable foods.

Highlight 2

Vegetarian Diets





Vegetarian Diets

- Dietary choices fall along a continuum
 - No foods of animal origin to few restrictions
- Part-time vegetarians or flexitarians
- Motivations for choosing vegetarian diets
- Vegetarian classifications
 - Foods excluded from diet



Health Benefits of Vegetarian Diets

- Vegetarian lifestyle factors
 - Tobacco, drugs, alcohol, physical activity
 - Limitations of research
- Weight control
- Blood pressure
- Heart disease
- Cancer
- Other diseases



Vegetarian Diet Planning

- Task
 - Use variety of foods within an energy allowance that maintains a healthy body weight
- MyPyramid
- Vegetarian food pyramid
- Vegetarian food guides
 - Help ensure adequate intakes of key nutrients



Vegetarian Diet Planning

- Protein
 - Sources
 - Requirements
- Iron
 - RDA is higher
 - Absorption
- Zinc
- Calcium
 - Food choices
- Vitamin B₁₂
 - Only in animal-derived foods
- Vitamin D
- Omega-3 fatty acids



Healthy Food Choices

- Vegetarian diets
 - Lower risk of mortality from several chronic diseases
- Nutritionally sound choices
- Variety is key to nutritional adequacy
- Macrobiotic diet
 - Way of life, not just a meal plan