Chapter 2
Planning a Healthy Diet
Principles and Guidelines
Diet 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
Principles and Guidelines

- **Nutrient density**
  - A measure of the nutrients a food provides relative to the kcalories it provides
  - You want the most nutrients for the fewest calories
  - Low-nutrient density foods
    - Empty kcalorie foods
Nutrient Density of Two Breakfast Options Compared

Key:
- Nutrient-dense breakfast
- Nutrient-poor breakfast

Daily recommendations (%)

Nutrient-dense breakfast

Nutrient-poor breakfast
Principles and Guidelines

- **Moderation**
  - Food selections – low in fat & added sugars

- **Variety**
  - Among and within food groups
  - Benefits of a varied diet
Principles and Guidelines

- Dietary Guidelines for Americans
  - Evidence-based advice
    - Attain and maintain a healthy weight
    - Reduce risk of chronic disease
    - Promote overall health
  - Reviewed and revised every five years
Principles and Guidelines

- Dietary Guidelines for Americans
  - Four major topic areas
    - Balancing kcalories to manage weight
    - Foods and food components to reduce
    - Foods and nutrients to increase
    - Building healthy eating patterns

- [www.health.gov/dietaryguidelines](http://www.health.gov/dietaryguidelines)
Dietary Guidelines 2015 -
Key Recommendations

- Consume a healthy eating pattern that accounts for all foods and beverages within an appropriate calorie level.

- A healthy eating pattern includes:
  - A variety of vegetables from all of the subgroups—dark green, red and orange, legumes (beans and peas), starchy, and other
  - Fruits, especially whole fruits
  - Grains, at least half of which are 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), and nuts, seeds, and soy products
  - Oils
Dietary Guidelines 2015 - Key Recommendations

- **A healthy eating pattern limits:**
  - Saturated fats and *trans* fats, added sugars, and sodium
  - Consume less than 10 percent of calories per day from added sugars[^3]
  - Consume less than 10 percent of calories per day from saturated fats[^4]
  - Consume less than 2,300 milligrams (mg) per day of sodium
  - If alcohol is consumed, it should be consumed in moderation—up to one drink per day for women and up to two drinks per day for men—and only by adults of legal drinking age.[^6]
### Balancing Calories to Manage Weight

- Prevent and/or reduce overweight and obesity through improved eating and physical activity behaviors (see Chapter 9).
- Control total calorie intake to manage body weight. For people who are overweight or obese, this will mean consuming fewer calories from foods and beverages (see Chapter 8).
- Increase physical activity and reduce time spent in sedentary behaviors (see Chapter 14).
- Maintain appropriate calorie balance during each stage of life—childhood, adolescence, adulthood, pregnancy and breastfeeding, and older age (see Chapters 14–16).

### Foods and Food Components to Reduce

- Reduce daily sodium intake to less than 2300 milligrams and further reduce intake to 1500 milligrams among persons who are 51 and older and those of any age who are African American or have hypertension, diabetes, or chronic kidney disease (see Chapter 12).
- Consume less than 10 percent of calories from saturated fatty acids by replacing them with monounsaturated and polyunsaturated fatty acids (see Chapter 5).
- Consume less than 300 milligrams per day of dietary cholesterol (see Chapter 5).
- Keep trans fatty acid consumption as low as possible by limiting foods that contain synthetic sources of trans fats, such as partially hydrogenated oils, and by limiting other solid fats (see Chapter 5).
- Reduce the intake of calories from solid fats and added sugars (see Chapters 4–5).
- Limit the consumption of foods that contain refined grains, especially refined grain foods that contain solid fats, added sugars, and sodium (see Chapters 4, 5, and 12).
- If alcohol is consumed it should be consumed in moderation—up to one drink per day for women and two drinks per day for men—and only by adults of legal drinking age (see Highlight 7).

### Foods and Nutrients to Increase

- Increase vegetable and fruit intake.
- Eat a variety of vegetables, especially dark-green and red and orange vegetables and beans and peas.
- Consume at least half of all grains as whole grains. Increase whole-grain intake by replacing refined grains with whole grains.
- Increase intake of fat-free or low-fat milk and milk products, such as milk, yogurt, cheese, or fortified soy beverages.
- Choose a variety of protein foods, which include seafood, lean meat and poultry, eggs, beans and peas, soy products, and unsalted nuts and seeds.
- Increase the amount and variety of seafood consumed by choosing seafood in place of some meat and poultry.
- Replace protein foods that are higher in solid fats with choices that are lower in solid fats and calories and/or are sources of oils.
- Use oils to replace solid fats where possible (see Highlight 5).
- Choose foods that provide more potassium, dietary fiber, calcium, and vitamin D, which are nutrients of concern in American diets (see Chapters 4, 11, and 12). These foods include vegetables, fruits, whole grains, and milk and milk products.

### Building Healthy Eating Patterns

- Select an eating pattern that meets nutrient needs over time at an appropriate calorie level.
- Account for all foods and beverages consumed and assess how they fit within a total healthy eating pattern.
- Follow food safety recommendations when preparing and eating foods to reduce the risk of foodborne illnesses (see Chapter 19).

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**NOTE:** These guidelines are intended for adults and healthy children ages 2 and older.

**SOURCE:** The Dietary Guidelines for Americans, available at www.healthierus.gov/dietaryguidelines.
Diet-Planning Guides

- USDA Food Patterns
  - Tool used for diet planning
  - Five major food groups
    - Fruit, Vegetables, Grains, Meats and Legumes, Milk
    - Recommended daily amounts for each group
  - Notable nutrients
  - Serving equivalents
  - Nutrient density
Diet-Planning Guides

FRUITS

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, kiwi, kiwi, mango, nectarines; oranges, papaya, peaches, pears, pineapple, plums, raspberries, strawberries, watermelon; dried fruit (dates, figs, raisins); unsweetened juice.
- Canned or frozen fruit in syrup, juice, punches, specks, and fruit drinks with added sugars; fried plantains.

VEGETABLES

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 cooked legumes; 1 c cooked vegetables; 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 key products such as tofu, and split peas.
4. Starchy vegetables: Cauliflower, green peas, hominy, lima beans, and potatoes.
5. Other vegetables: Artichokes, asparagus, bamboo shoots, bean sprouts, beets, brussels sprouts, cabbages, carrots, cauliflower, celery, cucumbers, eggplant, green beans, iceberg lettuce, mushrooms, okra, onions, peppers, scarlet, snow peas, tomatoes, vegetable juices, zucchinis.

- Baked beans, canned sweet potatoes, collard, french fries, potato salad, refried beans, scallions, tomatoes, turnip greens, yellow squash, zucchini.

MEAT, Poultry, FISH, LEGUMES, EGGS, AND NUTS

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

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

- 1 oz meat is equivalent to 1 oz cooked lean meat, poultry, fish, or egg; 1 c cooked legumes or nuts; 1 tsp peanut butter; 1/2 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, pecans, walnuts) or seeds (flaxseeds, pumpkin seeds, sunflower seeds).
- Bacon, baked beans, fried meat, fish, poultry, eggs, or tofu; rolled beans; ground meat; hot dogs; luncheon meats; marbled steak; poultry with skin; sausages; spare ribs.

MILK, YOGURT, AND CHEESE

Make low-fat 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; 1/2 oz fat-free natural cheese; 2 oz fat-free processed cheese.
- Fat-free milk and fat-free milk products such as buttermilk, cream, 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

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 calories.

- 1 tsp oil or oil equivalent to 1 tsp fat-free mayonnaise; 2 tbsp light salad dressing; 1 tsp vegetable oil; 1 tsp soft margarine.
- Liquid vegetable oils such as corn, canola, palm, olive, peanut, softbutter, and sunflower oils; mayonnaise, cream sauce, dressing, soft, trans-free margarine.
- Unrefined oils that occur naturally in foods such as avocados, fat-free fish, nuts, olives, seeds (flaxseeds, sesame seeds), and soyfish.

SOLID FATS AND ADDED SUGARS

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 calories but few nutrients, and intakes should not exceed the discretionary kilocalorie allowance—calories that meet energy needs after all nutrient needs have been met with nutrient-dense foods. Alcohol also contributes abundant calories but few nutrients, and its kilocalories are counted among discretionary kilocalories. See Table 2-2 for some discretionary kilocalorie 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.
- Alcohol beverages include beer, wine, and liquor.
Diet-Planning Guides

- **USDA Food Patterns**
  - Notable nutrients
    - Key nutrients of each food group
    - Allows for flexibility in diet plan
    - Greater encouragement of some food groups
  - Serving equivalents
    - Fruits, vegetables, milk = cups
    - Grains and meats = ounces
USDA Food Patterns

**Fruits** contribute folate, vitamin A, vitamin C, potassium, and fiber.

Consume a variety of fruits, and choose whole or cut-up fruits more often than fruit juice.

Apples, apricots, avocados, bananas, blueberries, cantaloupe, cherries, grapefruit, grapes, guava, honeydew, kiwi, mango, nectarines, oranges, papaya, peaches, pears, pineapples, plums, raspberries, strawberries, tangerines, watermelon; dried fruit (dates, figs, prunes, raisins); 100% fruit juices

Limit these fruits that contain solid fats and/or added sugars:
Canned or frozen fruit in syrup; juices, punches, ades, and fruit drinks with added sugars; fried plantains

**Vegetables** contribute folate, vitamin A, vitamin C, vitamin K, vitamin E, magnesium, potassium, and fiber.

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

Dark-green vegetables: Broccoli and leafy greens such as arugula, beet greens, bok choy, collard greens, kale, mustard greens, romaine lettuce, spinach, turnip greens, watercress

Red and orange vegetables: Carrots, carrot juice, pumpkin, red bell peppers, sweet potatoes, tomatoes, tomato juice, vegetable juice, winter squash (acorn, butternut)

Legumes: Black beans, black-eyed peas, garbanzo beans (chickpeas), kidney beans, lentils, navy beans, pinto beans, soybeans and soy products such as tofu, split peas, white beans

Starchy vegetables: Cassava, corn, green peas, hominy, lima beans, potatoes

Other vegetables: Artichokes, asparagus, bamboo shoots, bean sprouts, beets, brussels sprouts, cabbages, cactus, cauliflower, celery, cucumbers, eggplant, green beans, green bell peppers, iceberg lettuce, mushrooms, okra, onions, seaweed, snow peas, zucchini

Limit these vegetables that contain solid fats and/or added sugars:
Baked beans, candied sweet potatoes, coleslaw, french fries, potato salad, refried beans, scalloped potatoes, tempura vegetables
USDA Food Patterns

**Grains** contribute folate, niacin, riboflavin, thiamin, iron, magnesium, selenium, and fiber.

Make most (at least half) of the grain selections whole grains.

Whole grains: amaranth, barley, brown rice, buckwheat, bulgur, cornmeal, millet, oats, quinoa, rye, wheat, wild rice and whole-grain products such as breads, cereals, crackers, and pastas; popcorn

Enriched refined products: bagels, breads, cereals, pastas (couscous, macaroni, spaghetti), pretzels, white rice, rolls, tortillas

Limit these grains that contain solid fats and/or added sugars:
Biscuits, cakes, cookies, cornbread, crackers, croissants, doughnuts, fried rice, granola, muffins, pastries, pies, presweetened cereals, taco shells

**Protein foods** contribute protein, essential fatty acids, niacin, thiamin, vitamin B₆, vitamin B₁₂, iron, magnesium, potassium, and zinc.

Choose a variety of protein foods from the three subgroups, including seafood in place of meat or poultry twice a week.

Seafrod: Fish (catfish, cod, flounder, haddock, halibut, herring, mackerel, pollock, salmon, sardines, sea bass, snapper, trout, tuna), shellfish (clams, crab, lobster, mussels, oysters, scallops, shrimp)

Meats, poultry, eggs: Lean or low-fat meats (fat-trimmed beef, game, ham, lamb, pork, veal), poultry (no skin), eggs

Nuts, seeds, soy products: Unsalted nuts (almonds, cashews, filberts, pecans, pistachios, walnuts), seeds (flaxseeds, pumpkin seeds, sesame seeds, sunflower seeds), legumes, soy products (textured vegetable protein, tofu, tempeh), peanut butter, peanuts

Limit these protein foods that contain solid fats and/or added sugars:
Bacon, baked beans; fried meat, seafood, poultry, eggs, or tofu; refined beans; ground beef; hot dogs; luncheon meats; marbled steaks; poultry with skin; sausages; spare ribs
**USDA Food Patterns**

**Milk and milk products** contribute protein, riboflavin, vitamin B₁₂, calcium, potassium, and, when fortified, vitamin A and vitamin D.

**Make fat-free or low-fat choices. Choose other calcium-rich foods if you don’t consume milk.**

Fat-free or 1% low-fat milk and fat-free or 1% low-fat milk products such as buttermilk, cheeses, cottage cheese, yogurt; fat-free fortified soy milk

**Limit these milk products that contain solid fats and/or added sugars:**
2% reduced-fat milk and whole milk; 2% reduced-fat and whole-milk products such as cheeses, cottage cheese, and yogurt; flavored milk with added sugars such as chocolate milk, custard, frozen yogurt, ice cream, milk shakes, pudding, sherbet; fortified soy milk

**Oils** are not a food group, but are featured here because they contribute vitamin E and essential fatty acids.

**Use oils instead of solid fats, when possible.**

Liquid vegetable oils such as canola, corn, flaxseed, nut, olive, peanut, safflower, sesame, soybean, 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), shellfish

**Limit these solid fats:**
Butter, animal fats, stick margarine, shortening

1 c milk or milk product =
1 c milk, yogurt, or fortified soy milk
1½ oz natural cheese
2 oz processed cheese

1 tsp oil =
1 tsp vegetable oil
1 tsp soft margarine
1 tbs low-fat mayonnaise
2 tbs light salad dressing
Estimated Daily kCalorie Needs for Adults

<table>
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<tr>
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<th>Sedentary&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Active&lt;sup&gt;b&lt;/sup&gt;</th>
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<td>31–50 yr</td>
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<td>2500</td>
<td>3000</td>
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<tr>
<td>31–50 yr</td>
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</tr>
<tr>
<td>51+ yr</td>
<td>2100</td>
<td>2600</td>
</tr>
</tbody>
</table>

<sup>a</sup>Sedentary describes a lifestyle that includes only the activities typical of day-to-day life.

<sup>b</sup>Active describes a lifestyle that includes physical activity equivalent to walking more than 3 miles per day at a rate of 3 to 4 miles per hour, in addition to the activities typical of day-to-day life.

NOTE: kCalorie values reflect the midpoint of the range appropriate for age and gender, but within each group, older adults may need fewer kcalories and younger adults may need more. In addition to gender, age, and activity level, energy needs vary with height and weight (see Chapter 8 and Appendix F).
## USDA Food Patterns: Recommended Daily Amounts

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<thead>
<tr>
<th></th>
<th>1600 kcal</th>
<th>1800 kcal</th>
<th>2000 kcal</th>
<th>2200 kcal</th>
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<td>1½ c</td>
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<td>2 c</td>
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<tr>
<td>Vegetables</td>
<td>2 c</td>
<td>2½ c</td>
<td>2½ c</td>
<td>3 c</td>
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<td>3½ c</td>
<td>3½ c</td>
<td>4 c</td>
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<td>Grains</td>
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<td>6 oz</td>
<td>6 oz</td>
<td>7 oz</td>
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<td>6½ oz</td>
<td>7 oz</td>
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<td>Discretionary kcalories</td>
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<td>161 kcal</td>
<td>258 kcal</td>
<td>266 kcal</td>
<td>330 kcal</td>
<td>362 kcal</td>
<td>395 kcal</td>
<td>459 kcal</td>
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</table>
Serving Size Comparisons

- 1 cup cooked vegetables = a fist
- 1 medium fruit = a baseball
- ¼ cup dried fruit = a golf ball
- 3 oz meat = a deck of cards
- 2 tbsp peanut butter = a marshmallow
- 1 ½ oz cheese = 6 stacked dice
- ½ cup ice cream = a racquetball
- 4 small cookies = 4 poker chips
Serving Sizes

http://www.youtube.com/watch?v=LBko_3wT44Q
Diet-Planning Guides

- USDA Food Guide
  - Nutrient dense choices
  - Mixtures of foods
  - Vegetarians
    - Can still use USDA Food Guide
  - Ethnic food choices
# Ethnic Food Choices

## TABLE 2-5 Ethnic Food Choices

<table>
<thead>
<tr>
<th></th>
<th>Grains</th>
<th>Vegetables</th>
<th>Fruits</th>
<th>Protein Foods</th>
<th>Milk and Milk Products</th>
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<tr>
<td><strong>Asian</strong></td>
<td>Rice, noodles, millet</td>
<td>Amaranth, baby corn, bamboo shoots, chayote, bok choy, mung bean sprouts, sugar peas, straw mushrooms, water chestnuts, kelp</td>
<td>Carambola, guava, kumquat, lychee, persimmon, melons, mandarin orange</td>
<td>Soybeans and soy products such as soy milk and tofu, squid, duck eggs, pork, poultry, fish and other seafood, peanuts, cashews</td>
<td>Usually excluded</td>
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<td><strong>Mediterranean</strong></td>
<td>Pita pocket bread, pastas, rice, couscous, polenta, bulgur, focaccia, Italian bread</td>
<td>Eggplant, tomatoes, peppers, cucumbers, grape leaves</td>
<td>Olives, grapes, figs</td>
<td>Fish and other seafood, gyros, lamb, chicken, beef, pork, sausage, lentils, fava beans</td>
<td>Ricotta, provolone, parmesan, feta, mozzarella, and goat cheeses; yogurt</td>
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<tr>
<td><strong>Mexican</strong></td>
<td>Tortillas (corn or flour), taco shells, rice</td>
<td>Chayote, corn, jicama, tomato salsa, cactus, cassava, tomatoes, yams, chilies</td>
<td>Guava, mango, papaya, avocado, plantain, bananas, oranges</td>
<td>Refried beans, fish, chicken, chorizo, beef, eggs</td>
<td>Cheese, custard</td>
</tr>
</tbody>
</table>
Discretionary kcalorie allowance
• Difference between kcalories supplied and those needed
• Added sugars and fats
Diet-Planning Guides

  - Educational tool
  - Combines USDA Food Patterns and Dietary Guidelines
  - Allows for personal planning
Diet-Planning Using the 2000-kCalorie USDA Food Pattern

**TABLE 2-6  Diet Planning Using the 2000-kCalorie USDA Food Pattern**

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. 44 (with a little less oil).

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Amounts</th>
<th>Breakfast</th>
<th>Lunch</th>
<th>Snack</th>
<th>Dinner</th>
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<td>4 tsp</td>
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</table>
Sample Menu

1. Choose the number of servings needed from each group.

2. Assign food groups to daily meals and snacks.

This sample menu provides about 1850 kcalories.
Dietary Intakes Compared to Recommendations
Food Group Intake Comparisons

- At least half of the grain selections should be whole grains.
- On average, actual intakes of all protein foods is close to recommended levels, but actual intakes of the seafood subgroup is only 44 percent of recommended levels.
Diet-Planning Guides – Grocery Shopping

- Grains
  - Whole-grain products
  - Fortification & enrichment
- Vegetables
  - Fresh vs. canned or frozen
- Milk and milk products
- Fruits
  - Colors
  - Fruit juices
- Protein foods
  - Lean cuts
  - Soy products
  - Portion sizes
  - Cooking techniques
Grains

- **Refined foods** lose nutrients during processing.
- **Enriched foods** have nutrients added back that were lost during processing, including iron, thiamin, riboflavin, niacin, and folate.
- **Whole-grain** products are not refined. Examples include brown rice and oatmeal.
- **Fortified foods** have nutrients added that were not part of the original food.

Processed foods:

- have been treated to change their properties
- may have lost nutrients and gained sugar, fat and salt
A Wheat Plant

The protective coating of **bran** around the kernel of grain is rich in nutrients and fiber.

The **endosperm** contains starch and proteins.

The **germ** is the seed that grows into a wheat plant, so it is especially rich in vitamins and minerals to support new life.

The outer **husk** (or **chaff**) is the inedible part of a grain.

Whole-grain products contain much of the germ and bran, as well as the endosperm; that is why they are so nutritious. Refined grain products contain only the endosperm. Even with nutrients added back, they are not as nutritious as whole-grain products, as the next figure shows.

Common types of flour:

- **Refined flour**: finely ground endosperm that is usually enriched with nutrients and bleached for whiteness; sometimes called white flour.
- **Wheat flour**: any flour made from the endosperm of the wheat kernel.
- **Whole-wheat flour**: any flour made from the entire wheat kernel.

The difference between **white flour** and **white wheat** is noteworthy. Typically, white flour refers to refined flour (as defined above). Most flour—whether refined, white, or whole wheat—is made from red wheat. Whole-grain products made from red wheat are typically brown and full flavored.

To capture the health benefits of whole grains for consumers who prefer white bread, manufacturers use an albino variety of wheat called **white wheat**. Whole-grain products made from white wheat provide the nutrients and fiber of a whole grain with a light color and natural sweetness. Read labels carefully—white bread is a whole-grain product only if it is made from whole white wheat.
Guidelines to Groceries

- Examples of whole grains include:
  - Barley, buckwheat, bulgur, corn, popcorn, couscous, oats and oatmeal, brown rice, whole wheat, whole rye

- Ready to eat breakfast cereals are the most highly fortified foods on the market

- Grains are enriched with:
  - Iron, Thiamin, Riboflavin, Niacin, Folate
From Guidelines to Groceries

- **Vegetables**
  - Choose fresh vegetables often.
  - Dark green leafy and yellow-orange vegetables are important.
  - Good sources of vitamins, minerals, and fiber.
  - Be careful to control added fat and salt.

- **Legumes**
  - Variety is important
  - Economical
  - Low-fat, nutrient-rich and fiber-rich
From Guidelines to Groceries

- **Fruit**
  - Choose citrus and yellow-orange fruits.
  - Processed fruits are acceptable alternatives to fresh.
  - Provides vitamins, minerals, fibers and phytochemicals
  - Fruit juices lack fiber but are healthy beverages.
  - Watch energy intakes and fruit “drinks.”
From Guidelines to Groceries

- **Meat, fish and poultry**
  - Provides minerals, protein and B vitamins
  - Choose lean cuts.
  - **Textured vegetable protein** is a processed soybean protein and can be used in recipes.
  - Weighing can be used to determine portion sizes.
  - Use low-fat cooking methods, and trim and drain fat to reduce fat intake.
From Guidelines to Groceries

- Milk
  - Dairy foods are often fortified with vitamins A and D.
  - Imitation foods that resemble other foods are nutritionally inferior.
  - Food substitutes are designed to replace other foods.
  - Many lower fat dairy products are available including fat-free, non-fat, skim, zero-fat, no-fat, low-fat, reduced-fat, and less-fat milk.
Understanding 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

<table>
<thead>
<tr>
<th>Serving size: 7/8 cup (28 g)</th>
<th>Servings per container: 14</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amount per serving</strong></td>
<td></td>
</tr>
<tr>
<td>Calories: 110</td>
<td>Calorie from fat: 9</td>
</tr>
<tr>
<td>% Daily Value*</td>
<td></td>
</tr>
<tr>
<td>Total Fat: 1 g</td>
<td>2%</td>
</tr>
<tr>
<td>Saturated fat: 0 g</td>
<td>0%</td>
</tr>
<tr>
<td>Trans fat: 0 g</td>
<td></td>
</tr>
<tr>
<td>Cholesterol: 0 mg</td>
<td>0%</td>
</tr>
<tr>
<td>Sodium: 250 mg</td>
<td>10%</td>
</tr>
<tr>
<td>Total Carbohydrate: 23 g</td>
<td>6%</td>
</tr>
<tr>
<td>Dietary Fiber: 1.5 g</td>
<td>6%</td>
</tr>
<tr>
<td>Sugars: 10 g</td>
<td></td>
</tr>
<tr>
<td>Protein: 3 g</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td></td>
</tr>
<tr>
<td>Fat</td>
<td></td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td></td>
</tr>
<tr>
<td>Protein</td>
<td></td>
</tr>
<tr>
<td>Vitamin A 25%</td>
<td></td>
</tr>
<tr>
<td>Vitamin C 5%</td>
<td></td>
</tr>
<tr>
<td>Calcium 2%</td>
<td></td>
</tr>
<tr>
<td>Iron 25%</td>
<td></td>
</tr>
</tbody>
</table>

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

The ingredients in descending order of predominance by weight:

- Corn, Sugar, Salt, Malt Flavoring, Maltodextrin, Preserved by BHT
- Vitamin B Nanocapsules: Niacin, Riboflavin, Thiamin, and Pyridoxine
- Vitamin A Palmitate
- Vitamin D (Cholecalciferol)
- Other Ingredients: Flaxseed meal, Sucrose, and Soybean Oil.
Food Labels

- **Ingredient list**
  - Listing of all ingredients
  - Descending order of predominance by weight

- **Serving sizes**
  - Standards are established by Food and Drug Administration (FDA)
  - Adjust calculations according to amount consumed
  - Sizes listed vs. USDA Food Pattern sizes
Food Labels

**Nutrition Facts**
- Serving sizes and **Daily Values**
- Required information
  - Total food energy (kcalories)
  - Kcalories from fat
  - Total fat; saturated fat; trans fat; cholesterol
  - Sodium
  - Total carbohydrate; dietary fiber; sugars
  - Protein
  - Vitamins A & C; iron; calcium
### Food Labels

#### Nutrition Facts

- Listed by quantity and percentage standards per serving, called **Daily Values**
- kCalories listed as total kcalories and kcalories from fat
- Fat listed by total fat, saturated fat, and trans fat
- Cholesterol
- Sodium
- Carbohydrate listed by total carbohydrate, starch, sugars, and fiber
- Protein
- Vitamin A, vitamin C, iron, and calcium are listed in % DV only.

#### Nutrition Facts Table

<table>
<thead>
<tr>
<th>Amount Per Serving</th>
<th>Calories 250</th>
<th>Calories from Fat 110</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Fat</strong> 12g</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td><strong>Saturated Fat</strong> 3g</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td><strong>Trans Fat</strong> 3g</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cholesterol</strong> 30mg</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td><strong>Sodium</strong> 470mg</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td><strong>Potassium</strong> 700mg</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td><strong>Total Carbohydrate</strong> 31g</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td><strong>Dietary Fiber</strong> 0g</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td><strong>Sugars</strong> 5g</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Protein</strong> 5g</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Quick guide to % DV

- 5% or less is low
- 20% or more is high

#### Limit these

#### Get enough of these

#### Footnote

*Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.*
Daily Values for Food Labels

- Based on a 2000 kcalorie diet
- Ballpark estimate of how a food contributes to the total diet

**TABLE 2-8 Daily Values for Food Labels**

Food labels must present the “% Daily Value” for these nutrients.

<table>
<thead>
<tr>
<th>Food Component</th>
<th>Daily Value</th>
<th>Calculation Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat</td>
<td>65 g</td>
<td>30% of kcallories</td>
</tr>
<tr>
<td>Saturated fat</td>
<td>20 g</td>
<td>10% of kcallories</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>300 mg</td>
<td>—</td>
</tr>
<tr>
<td>Carbohydrate (total)</td>
<td>300 g</td>
<td>60% of kcallories</td>
</tr>
<tr>
<td>Fiber</td>
<td>25 g</td>
<td>11.5 g per 1000 kcallories</td>
</tr>
<tr>
<td>Protein</td>
<td>50 g</td>
<td>10% of kcallories</td>
</tr>
<tr>
<td>Sodium</td>
<td>2400 mg</td>
<td>—</td>
</tr>
<tr>
<td>Potassium</td>
<td>3500 mg</td>
<td>—</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>60 mg</td>
<td>—</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>1500 µg</td>
<td>—</td>
</tr>
<tr>
<td>Calcium</td>
<td>1000 mg</td>
<td>—</td>
</tr>
<tr>
<td>Iron</td>
<td>18 mg</td>
<td>—</td>
</tr>
</tbody>
</table>

NOTE: Daily Values were established for adults and children more than 4 years old. The values for energy-yielding nutrients are based on 2000 kcalories a day. For fiber, the Daily Value was rounded up from 23.
Nutrient and Health Claims

- Low fat
- Low calorie
- Oatmeal helps reduce cholesterol
- Rich in calcium
- Good source of fiber
- Helps promote a healthy heart
Label Claims

**Nutrient claims** characterize the level of a nutrient in the food—for example, “fat free” or “less sodium.”

**Health claims** characterize the relationship of a food or food component to a disease or health-related condition—for example, “soluble fiber from oatmeal daily in a diet low in saturated fat and cholesterol may reduce the risk of heart disease” or “a diet low in total fat may reduce the risk of some cancers.”

**Structure/function claims** describe the effect that a substance has on the structure or function of the body and do not make reference to a disease—for example, “supports immunity and digestive health” or “calcium builds strong bones.”
Food Label Terms

- **Fat/Sodium**
  - **Fat Free** = Less than 0.5 gm of fat per serving
  - **Low Fat** = 3 gm or less fat/serving
  - **Less Fat** = 25% or less fat than the comparison food
  - **Low Cholesterol** = 20 mg or less Cholesterol

- **Low Sodium** = 140 mg or less per serving
  - **Very Low Sodium** = 35 mg or less per serving

- **Lite or Light** - 50% or less of the fat or sodium than the comparison food
Food Label Terms

- **Kcalories**
  - **Kcal Free** = Less than 5 kcal/Serving
  - **Light** = One third fewer Kcal than the comparison food
  - **Low Calorie** = 40 Kcal or less per serving
  - **Reduced Calorie** = At least 25% fewer Kcal per serving than the comparison food

- **Fiber**
  - **High Fiber** = 5 grams or more of fiber per serving
Vegetarian Diets
Vegetarian Diets

Health Benefits of Vegetarian Diets - Lifestyle practices are often different from omnivores

- Healthy body weights are common due to high intakes of fiber and low intakes of fat.
- Blood pressure is often lower due to lower body weights, low-fat and high-fiber diets, and plenty of fruits and vegetables.
- Lower incidence of heart disease due to high-fiber diets, eating monounsaturated and polyunsaturated fats, and low intakes of dietary cholesterol
  - Inclusion of soy products like tofu and tempeh
- Lower incidence of cancer due to high intakes of fruits and vegetables
- Other diseases
Vegetarian Diet Planning

Specific information for planning a vegetarian diet can be found at myplate.gov

- **Protein**
  - Lacto-ovo-vegetarians consume animal-derived products and thus high-quality protein.
  - Meat replacements and textured vegetable protein can be used.

- **Iron**
  - Iron-rich vegetables and fortified grain products consumed with foods that are high in vitamin C can help vegetarians meet iron needs.

- **Zinc**
  - Consuming legumes, whole grains, and nuts can provide zinc to those who do not consume meat.
Vegetarian Diet Planning

- **Calcium**
  - Calcium is not an issue for the lactovegetarian.
  - Calcium-rich foods should be consumed.
- **Vitamin B$_{12}$**
  - Vegans may not receive enough B12 from the diet.
  - Consumption of fortified products or supplementation may be necessary.
- **Vitamin D** can come from sunlight exposure or fortified foods.
- **Omega-3 Fatty Acids** - Food sources include flaxseed, walnuts, soybeans, and their oils.
# Good Vegetarian Sources of Key Nutrients

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>Grains</th>
<th>Vegetables</th>
<th>Fruits</th>
<th>Protein Foods</th>
<th>Milk</th>
<th>Oils</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein</td>
<td>Whole grains&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Dark green leafy vegetables (spinach, turnip greens)</td>
<td>Dried fruits (apricots, prunes, raisins)</td>
<td>Legumes, seeds, nuts, soy products (tempeh, tofu, veggie burgers)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Milk, cheese, yogurt (for lactovegetarians)</td>
<td></td>
</tr>
<tr>
<td>Iron</td>
<td>Fortified cereals, enriched and whole grains</td>
<td>Dark green leafy vegetables (spinach, turnip greens)</td>
<td>Dried fruits (apricots, prunes, raisins)</td>
<td>Legumes (black-eyed peas, kidney beans, lentils)</td>
<td>Milk, cheese, yogurt (for lactovegetarians)</td>
<td></td>
</tr>
<tr>
<td>Zinc</td>
<td>Fortified cereals, whole grains</td>
<td>Dark green leafy vegetables (bok choy, broccoli, collard greens, kale, mustard greens, turnip greens, watercress)</td>
<td>Fortified juices, figs</td>
<td>Legumes (garbanzo beans, kidney beans, navy beans), nuts, seeds (pumpkin seeds)</td>
<td>Milk, cheese, yogurt (for lactovegetarians)</td>
<td></td>
</tr>
<tr>
<td>Calcium</td>
<td>Fortified cereals</td>
<td>Dark green leafy vegetables (bok choy, broccoli, collard greens, kale, mustard greens, turnip greens, watercress)</td>
<td>Fortified juices, figs</td>
<td>Fortified soy products, nuts (almonds), seeds (sesame seeds)</td>
<td>Milk, cheese, yogurt (for lactovegetarians)</td>
<td>Fortified soy milk</td>
</tr>
<tr>
<td>Vitamin B&lt;sub&gt;12&lt;/sub&gt;</td>
<td>Fortified cereals</td>
<td></td>
<td></td>
<td>Eggs (for ovo-vegetarians)</td>
<td>Milk, cheese, yogurt (for lactovegetarians)</td>
<td>Fortified soy milk</td>
</tr>
<tr>
<td>Vitamin D</td>
<td></td>
<td></td>
<td></td>
<td>Fortified soy products</td>
<td>Milk, cheese, yogurt (for lactovegetarians)</td>
<td>Fortified soy milk</td>
</tr>
<tr>
<td>Omega-3 fatty acids</td>
<td></td>
<td></td>
<td></td>
<td>Flaxseed, walnuts, soybeans</td>
<td>Flaxseed oil, walnut oil, soybean oil</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>As Chapter 6 explains, many plant proteins do not contain all the essential amino acids in the amounts and proportions needed by human beings. To improve protein quality, vegetarians can eat grains and legumes together, for example, although it is not necessary if protein intake is varied and energy intake is sufficient.
Healthy Food Choices

- A variety of food is the key to adequacy. Be careful of macrobiotic diets.
- Meal patterns are changed.
- Diet and other lifestyle habits need to be healthy.